NEW
AMERICAN CYCLOPÆDIA.

VOL. XVI.

V–ZWIRNER.

THE NEW

AMERICAN CYCLOPÆDIA:

A

Popular Dictionary

OF

GENERAL KNOWLEDGE.

EDITED BY

GEORGE RIPLEY AND CHARLES A. DANA.

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V–ZWIRNER.

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V, the 22d letter and 17th consonant of the English alphabet. It was anciently called U consonant. Though found on the most ancient Roman monuments of which we have any knowledge, and even in Etruscan and Samnite inscriptions, it was unknown, according to Tacitus, to the primitive alphabet of the Latins. The same character was used to represent both U and V, these letters also being frequently interchanged (see U); and when the emperor Claudius, as Suetonius relates, wished to introduce a separate sign for the sound of V, he made choice of the inverted digamma Ⅎ. In the inscriptions of the Etruscans and other primitive inhabitants of Italy, V is frequently confounded with the Æolian digamma F, through which it claims relationship with the Semitic *vav*. Among the Hebrews, too, and probably also among the Phœnicians, the corresponding letter was employed both as consonant and vowel. The present form of V is derived from the Greek *upsilon* (Υ), which was sometimes represented without the stem or vertical bar.—Beside *u*, this letter is interchanged with *b*, *f*, and *m*. The Hebrew *beth* sometimes had a sound approaching that of V, and the Greek *beta* (β) is pronounced by the modern Greeks *vita* (veeta). The Spanish and Portuguese B, too, is in many cases pronounced like V, and for our sound of the former letter they have a peculiar character. (See B, and F.) The change with *m* is noticed chiefly in Welsh, in which tongue *Roman* becomes *Rofan* (pronounced Rovan), while for the Lat. *amnis*, river, the Welsh equivalent is *Afon*.—V as a numeral denotes 5, or with a dash over it ($\bar{\text{v}}$), 500. On old French coins it signifies the mint of Troyes.

VAAGEN, East and West, two islands of the Loffoden group, the first, pop. 1,000, in lat. 68° [illegible]5′ N., long. 14° 10′ E., the second, pop. 2,000, in lat. 68° 25′ N., long. 13° 10′ E., each about 30 m. long by 15 wide. They are places of great resort for fishermen from January to April.

VAART, Jan Vander, a Flemish painter and engraver, born in Haarlem in 1647, died in London in 1721. He went to England in 1674, and remained there till his death. He painted landscapes, dead game, and other objects of still life. He engraved in mezzotint Wissing's portrait of Charles II., and Kneller's of the duchess of Monmouth, and some others.

VACA, Cabeça de. See Nuñez, Alvar.

VACCA-BERLINGHIERI, Francesco, an Italian physician, born at Ponsacco, near Pisa, in 1732, died in Pisa, Oct. 6, 1812. He was professor of surgery in the university of Pisa, was regarded as one of the first physicians of Italy, and refused the place of physician to the king of Poland because he would not leave his aged father. Among his works are: *Considerazioni intorno alle malattie putride* (Lucca, 1781); *Saggio intorno alle principali e piu frequenti malattie del corpo umano* (Lucca, 1799); *Riflessioni sui mezzi di stabilire e di conservare nell' uomo la sanita e la robustezza* (2 vols., Pisa, 1794); and *Filosofia della medicina* (Lucca, 1801).—Andrea, his son, born at Pisa in 1772, died there in 1826, was a skilful surgeon and valued writer.

VACCAJ, Nicolo, an Italian composer, born at Tolentino in the Papal States in 1791, was a pupil of Paisiello at Naples, and from 1811 to 1820 wrote operas, cantatas, and ballets which had a moderate success. He then taught singing in Venice, Trieste, and Vienna, wrote *Pietro il grande*, a comic opera performed at Parma, *Zadig ed Astartea*, performed at Naples, and *Giulietta e Romeo*, performed at Milan, his best work. He afterward taught singing in Paris and London, but returned to Italy in 1832, and in 1838 became first master of composition at the conservatory of Milan.

VACCARO. I. Andrea, an Italian painter, born in Naples in 1598, died there in 1670. He was a pupil of Stanzioni, adopted the style of Michel Angelo da Caravaggio, and afterward of Guido, and at the death of Stanzioni was regarded as the ablest artist of the Neapolitan school. One of his best works is a "Holy Family" in the church of Santa Maria degli Angeli at Naples. II. Francesco, an engraver and painter, born in Bologna in 1636, died in 1687, studied under Francesco Albano, and published a treatise on perspective illustrated with engravings from his own designs. There is a set of 12 perspective views of rivers, fountains, &c., bearing his name.

VACCINATION (Lat. *vacca*, a cow), inoculation for cow pox as a protection against small pox, first practised by Dr. Edward Jenner in 1796. (See JENNER.) On the 2d or 3d day after virus taken from a perfect vaccine vesicle, whether from the cow or the human subject, is placed in contact with the denuded dermis or true skin, the puncture is observed to be slightly inflamed. On the 4th or 5th day a vesicle is observed surrounded by a slight blush of inflammation, and containing a little colorless, transparent fluid. This increases in size until the 8th day, when it should be from ¼ to ⅓ inch in diameter, the blush of inflammation surrounding it at the same time having become more marked. The vesicle is umbilicated, that is, its centre is depressed below the level of the circumference, in this respect resembling the pustules of small pox. The vesicle is a compound one, being made of 10 to 14 distinct cells; one of these, if carefully punctured, gives issue to a minute drop of fluid, leaving the other cells still distended. On the 8th day the blush of surrounding inflammation, heretofore very slight, begins to extend, forming what is termed the areola; it attains its greatest diameter by the 11th day, after which it gradually fades and disappears. With the appearance of the areola the vesicle begins to become darker and dryer, and gradually concretes into a brown or mahogany-colored, translucent crust, which falls off about the 20th day, leaving a circular cicatrix marked with minute depressions or pits. About the 8th or 9th day there is usually some slight febrile disturbance present, which is often however scarcely noticeable. Such is the course of the true vaccine vesicle when uninterfered with, either by the presence of constitutional disease or by the accidental occurrence of inflammation.—When vaccination was first introduced, it was hoped and believed by its advocates that it would afford complete and permanent protection from the attacks of small pox. This hope has proved fallacious. It was discovered that those who had been well and thoroughly vaccinated were still liable to some extent to attacks of small pox; and though in general the disease was modified (varioloid) and rendered shorter in duration and milder in degree, still it occasionally resulted in death. The degree of protection afforded by vaccination becomes thus a question of great interest. Its extreme value was easily demonstrated by statistical researches. In England, in the last half of the 18th century, out of every 1,000 deaths, 96 occurred from small pox; in the first half of the present century, out of every 1,000 deaths, but 35 were caused by the same disease. The amount of mortality in a country by small pox would seem to bear a fixed relation to the extent to which vaccination is carried out. In all England and Wales, for some years previous to 1853, the proportional mortality by small pox was 21.9 to 1,000 deaths from all causes; in London it was but 16 to 1,000; in Ireland, where vaccination is much less general, it was 49 to 1,000, while in Connaught it was 60 to 1,000. On the other hand, in a number of European states where vaccination is more or less compulsory, the proportionate number of deaths from small pox varies from 2 per 1,000 of all causes in Bohemia, Lombardy, Venice, and Sweden, to 8.33 per 1,000 in Saxony. Although in many instances persons who had been vaccinated were attacked with small pox in a more or less modified form, it was noticed that the persons so attacked had been commonly vaccinated many years previously. It would seem that the mere lapse of time in many cases is sufficient to destroy the protective influence of vaccination. The question very naturally arises: For how long a period does the protective influence last? To this it is impossible to give a definite answer; it varies with different individuals. The same thing happens with regard to the protective influence of an attack of small pox itself; in most persons it lasts for life; many, after a period more or less prolonged, are liable to a second attack; while cases have occurred in which a third attack has proved fatal. The period of puberty is generally thought to produce such changes in the system as to destroy the protective influence of vaccination. In all cases revaccination would seem to be a test of the loss or presence of the protective influence; to render this test certain, where revaccination does not succeed on the first trial, it should be a second time carefully performed. In the Prussian army in 1848, 28,859 individuals were revaccinated; among whom, however, in 6,373 the cicatrices of the preceding vaccination were indistinct or invisible. Of these, 16,862 had regular vesicles, 4,404 irregular vesicles, and in 7,753 cases no effect was produced. On a repetition of the vaccination in these last, it succeeded in 1,579 cases. Among the whole number successfully revaccinated either in 1848 or in previous years, there occurred but a single case of varioloid, and not one case of small pox; while 7 cases of varioloid occurred either among the recruits or among those revaccinated without success.

VACHEROT, ÉTIENNE, a French philosopher, born in Langres, July 29, 1809. He was a pupil of the normal school, in which he became director of studies in 1837, filling at the same time the position of master of conferences in philosophy, and in 1839 acting as the substitute of Victor Cousin in his professorship at the Sorbonne. In 1846 appeared the first volume of his *Histoire critique de l'école d'Alexandrie* (3 vols. 8vo., 1846–'51), which was severely attacked by the clergy, and which led in 1851 to his forced retirement from the active duties of his office. In the following year he was dismissed for refusing to take the oath of allegiance to the new government. He has also published *Théorie des premiers principes suivant Aristote; De Rationis Auctoritate, tum in se, tum secundum Anselmum considerata* (1836); *La métaphysique et la science* (2 vols. 8vo., 1858); and *La démocratie* (1859), for which he was sentenced by a court of law to a year's imprisonment, reduced on appeal to 3 months. He has edited, under the titles of *École sensualiste* (1839) and *École Écossaise* (1840), the latter with the assistance of his brother-in-law M. Danton, two volumes of a course of lectures on the history of philosophy in the 18th century delivered by Cousin in 1819–'20, and written an *Introduction* to Cousin's history of moral philosophy in the 19th century (8vo., 1841).

VAGA, Perino del, or Pietro Buonaccorsi, an Italian painter, born in Florence in 1500, died in Rome in 1547. He was instructed by a Florentine painter named Vaga (whence the name generally applied to him), by whom he was brought to the notice of Giulio Romano and other scholars of Raphael. The latter, who was then engaged upon his designs for the *loggie* of the Vatican, employed him to assist Giovanni da Udine in the arabesque work, and was so pleased with his performances that he subsequently intrusted him with the execution of some of the principal designs in fresco. He thenceforth was a favorite pupil of Raphael, after whose death he rose into great reputation. Being compelled to leave Rome in 1527, impoverished by the sack of the city, he repaired to Genoa, where he entered the service of the prince Doria and founded a school of painting. He returned to Rome during the pontificate of Paul III., by whom he was intrusted with many valuable commissions; and at the time of his death he probably stood at the head of the Roman school. He designed after the style of Michel Angelo, and by Vasari is placed in that respect next to the great Florentine master. His works are widely distributed over Italy, the best being the "Creation of Eve" in the church of S. Marcello in Rome.

VAGRANT (Lat. *vagor*, to wander), in law, sometimes defined as one who has no settled home, but more properly one who wanders about without any settled home, refuses to work, and has no means of subsistence. The law looks upon vagrancy as an offence, not for its moral wrong nor for the harm it does to the man himself, but for its injury to society, and the demand it makes upon the means of society for the subsistence of the vagrant. If one having a settled home, without means of subsistence, requires help, he is a pauper, and not a vagrant; that is, he is entitled to aid, but is not an offender. On the other hand, if one leads a life of idle wandering, with no place which he regards as his home or which the law can so regard, but has means of subsistence and chooses so to use them, the law takes no cognizance of the fact, because he makes no call upon the public means, and inflicts no direct injury upon the public welfare. In all the states, so far as we know, there are statutes against vagrancy; and it is an offence recognized by ancient English statutes, and probably by the common law. The word vagabond seems to be used as synonymous with vagrant.

VAILLANT, François Le. See Le Vaillant.

VAILLANT, Jean Baptiste Philibert, a French soldier, born in Dijon, Dec. 6, 1790. After graduating as an engineer at the polytechnic school, he studied at the artillery school of Metz, obtained a commission as sub-lieutenant, Oct. 1, 1809, and immediately entered into active service. During the Russian campaign, having then the rank of captain, he was complimented in general orders and received the cross of the legion of honor; but in Aug. 1813, he was made prisoner and remained in captivity until the declaration of peace. He rejoined the emperor after the return from Elba, and fought bravely at Ligny and Waterloo. After the second restoration he remained in the army as an officer of the general staff, became *chef de bataillon* in 1826, and accompanied the expedition to Algiers, where he directed the siege of Fort l'Empereur (1830), the fall of which compelled the dey to capitulate. For this exploit, in the course of which he was severely wounded, he was promoted to the rank of lieutenant-colonel; and in Jan. 1833, he was made colonel in reward for his services at the siege of Antwerp. In 1834 he was sent to Algeria as commander of the corps of engineers. After his return to France he was made major-general (1838) and commander of the polytechnic school (1839), and employed upon the fortifications of Paris. In 1845 he became lieutenant-general. In the expedition to Italy and the siege of Rome (1849) he was second in command, but had virtually the whole direction of the attack, and received for his services the baton of marshal of France (Dec. 11, 1851) and the post of grand marshal of the palace under Napoleon III. In March, 1854, he became minister of war, retaining that office until April, 1859, when he exchanged it for a command in the army of the Alps. He served through the Italian campaign, and commanded at Milan during its occupation by the allies. In Nov. 1860, he became military commandant in the imperial household. He is also a count of the empire, a member of the senate, grand cross of the legion of honor, and a member of the academy of sciences. He has translated from the English an *Essai sur les principes de la construction des ponts militaires* (1823), and published a *Rapport sur la situation de l'Algérie* (1855).

VAILLANT, Jean Foy, a French numismatist, born in Beauvais, May 24, 1632, died Oct. 23, 1706. He studied medicine, but acquiring distinction as a numismatist was commissioned by Colbert to collect ancient medals in Italy, Sicily, and Greece, for the king's cabinet at Versailles. In 1674 he was sent on a second expedition of the same nature, but the vessel in which he sailed was captured by a corsair, and all on board were sold in Algiers as slaves. Vaillant was released after 4 months' bondage, and soon afterward was sent on an expedition through Egypt and several parts of Asia, returning in 1680 with a large collection of coins. Among his numerous works are: *Numismata Imperatorum Romanorum Præstantiora, a Julio*

Cæsare ad Postumum et Tyrannos (1672); *Seleucidarum Imperium, seu Historia Regum Syriæ ad Fidem Numismatum accommodata* (1681); and *Numismata Ærea Imperatorum et Cæsarum in Coloniis, Municipiis et Urbibus Jure Latino donatis* (2 vols. fol., Paris, 1688).

VAILLANT, Sébastien, a French botanist, born at Vigny, near Pontoise, May 26, 1669, died May 26, 1722. He was at first a musician, but afterward studied medicine, and while thus engaged received an appointment as surgeon in the royal fusileers, in which capacity he was present at the battle of Fleurus. Visiting Paris in 1691, he studied botany under Tournefort, and from 1708 until his death he was professor of botany and sub-demonstrator of plants in the *jardin du roi*. He was one of the first to recommend the sexual or artificial system of plants subsequently adopted by Linnæus. His principal work is the *Botanicon Parisiense*, published posthumously in 1727, under the direction of Boerhaave.

VALAIS (Ger. *Wallis*), a canton of Switzerland, bounded N. by Vaud and Bern, E. by Uri and Ticino, S. E. and S. by Piedmont, and S. W. and W. by Savoy, between lat. 45° 50′ and 46° 35′ N., and long. 6° 49′ and 8° 27′ E.; area, 2,019 sq. m.; pop. in 1860, 90,880. Its most important towns are Sion or Sitten, the capital, Martigny, Leuk, and Visp, all situated on or near the Rhône. On the N. and S. two chains of the Alps, the Bernese and Pennine, form the boundaries of the canton, and these are connected on the E. by the central group of the St. Gothard, by the Gallenstock, the Furca, and the Mutthorn. The surrounding mountains have summits varying from 12,000 to 15,000 feet in height, and the canton contains some of the most magnificent scenery in Europe. The central valley of the canton forms part of the basin of the Rhône, which here receives from the S. the Visp, Borgne, Dranse, and other tributaries, flowing through transverse valleys, the upper part of many of which is occupied by extensive glaciers. There are 17 glaciers in the Val de Bagnes, and 8 in the district of Simplon. The lower slopes of the mountains are covered with magnificent forests of pine, chestnut, walnut, and other hard woods, and orchards. The vine is cultivated to an altitude of 2,000 feet above the sea level, and the mulberry thrives in the valley of the Rhône. In the same locality there are large tracts of arable land, producing good crops of grain, and many of the finer fruits. The rearing of cattle forms the chief employment of the people. The manufactures are confined to some coarse articles for domestic use. The position of the canton gives it an important transit trade by the great lines of traffic across the Alps. The principal exports consist of cattle and a little grain and wine.—Two thirds of the inhabitants are French, and nearly all Roman Catholics, and the public schools are under the direction of the Jesuits. The canton was formerly an independent republic in alliance with Switzerland, but was annexed to that country by the congress of Vienna. All citizens over 18 years of age are entitled to vote at the election of a council in their *dizain*, or district, and each council sends 4 deputies to the diet or legislature, in which the president of each district has an *ex officio* seat, as has the bishop of Sion, whose vote counts as 4. The executive power is vested in a council of 5 elected annually by the diet.

VALCKENAER, Lodewijk Casper, a Dutch scholar, born in Leeuwarden, Friesland, in 1715, died March 15, 1785. At the university of Franeker, where he was educated, he became professor of Greek in 1741, and of Grecian antiquity in 1755; and at Leyden he received in 1766 the same two chairs together with that of Dutch history. He edited the works of several of the classical authors, and published *De Ritibus in Jurando a Veteribus Hebræis maxime ac Græcis observatis* (Franeker, 1735); *Ammonius de Adfinium Vocabulorum Differentia* (Leyden, 1739); and *Opuscula Philologica, Critica et Oratoria* (2 vols. 8vo., Leipsic, 1809).—Jan, a Dutch scholar and statesman, son of the preceding, born in Leyden in 1759, died in Haarlem, Jan. 25, 1821. He was professor of jurisprudence successively at Franeker and Utrecht; but, being an active leader of the anti-Orange party, was compelled to leave Holland in 1787. On Feb. 6, 1793, with others of his party, he appeared before the bar of the national assembly of France, and requested that body to send an army into Holland to support the party of the patriots. A French force under Pichegru was sent into the Netherlands in 1795, and Valckenaer, returning with it, became a member of the legislative body of the new republic, and was also appointed professor of public law in the university of Leyden. He soon after started a journal called "The Advocate of Batavian Liberty," which was relinquished in 1796, and Valckenaer was sent as ambassador of the Batavian republic to Spain. In 1801 he withdrew for a time from public life. Louis Bonaparte, king of Holland, sent him in 1810 on a mission to Napoleon, to prevent the contemplated incorporation of the Netherlands with France. His remonstrance was ineffectual, and the remainder of his life was spent in retirement and study.

VALDEZ. See Melendez Valdez.

VALDIVIA, a S. province of Chili, bounded N. by the province of Arauco, E. by the Andes, separating it from the Argentine Confederation and Patagonia, S. by Chiloe, and W. by the Pacific ocean; area, 12,318 sq. m.; pop. in 1857, 31,988. The chief towns are Valdivia, the capital, and Osorno. There are many fine harbors on the coast. The summits of the Andes are covered with snow throughout the year, and among them are several active volcanoes. The surface between the sea and the Andes is generally more level than that of other parts of Chili, and it is drained by many rivers and lakes. The most important streams are the

Cauten or Imperial, Tolten, Valdivia, Chaivin, Trumag, and Sinfondo. The soil is exceedingly fertile, but the greater part of the surface is covered with forests of excellent timber. The climate is moist, but remarkably healthy. Valdivia at one time yielded large quantities of gold, but the system of slavery which the Spaniards attempted to impose upon the natives caused a general revolt, which eventually led to the utter ruin of the mines. About ⅔ of the population are probably Araucanian Indians, and the remainder descendants of the Spaniards and mixed breeds.—Valdivia, the capital, is situated upon a sloping bank on the S. side of the river of the same name, about 9 m. from the Pacific, in lat. 39° 49′ S., long. 73° 15′ W.; pop. about 2,500, about 1,000 of whom are Germans. The harbor is a beautiful bay formed by the river, and is said by some to be one of the best in many respects on the E. side of the Pacific. The island of Manzera at the entrance to the river forms two passages, skirted by steep mountains strongly fortified. This part of the coast of Chili has been gradually rising from the ocean, and in 1820 Dr. Wayman found only 2 feet of water where 70 years before 6 Dutch line-of-battle ships had anchored. Valdivia is principally built of wood. Its chief trade is with Valparaiso, to which it exports large quantities of timber. It was founded in 1551 by Pedro de Valdivia, who obtained much gold from its vicinity. It became a rich and populous city, and was many times attacked and in 1590 destroyed by the Araucanians; after which it was rebuilt, and so strongly fortified as to resist all their attempts. It was taken by the Dutch in 1640, and by the patriots under Lord Cochrane in 1820.

VALÉE, Sylvain Charles, count, a French general, born at Brienne-le-Château, department of Aube, Dec. 17, 1773, died in Paris, Aug. 16, 1846. He was a pupil of the military school of Brienne, and, having attained the rank of lieutenant of artillery in 1792, was favorably noticed by Moreau in several engagements. In 1802 he was promoted to the rank of major. After serving with distinction at Eylau and Friedland, he was sent to Spain, appointed brigadier-general, promoted to the rank of general of division (1811) after the taking of Tarragona, and in 1814, as a reward for his brilliant services in the peninsula, created a count of the empire. Under the second restoration he was appointed an inspector of artillery (1822), and completely reorganized that arm of the service. In 1830 he was created a peer, but on the revolution of July in that year he retired to private life. Returning to active service in 1837, he gained several important victories in Algeria, and was made governor-general of that colony and marshal of France. In 1840 he was replaced by Gen. Bugeaud and returned home.

VALENCIA, an E. co. of New Mexico, bordering on Texas, bounded N. E. by the Gooal-pah or Canadian river and W. by the Rio Grande, and traversed by the Rio Pecos; pop. in 1860, 11,321. The soil is well adapted to grain and the grape. The surface is broken by ridges belonging to the Rocky mountain system. The productions in 1850 were 157,795 bushels of Indian corn, 42,983 of wheat, 8,115 of peas and beans, and 1,973 galls. of wine. There were 7 churches. Capital, Valencia.

VALENCIA, an ancient kingdom of Spain, bounded N. by Catalonia, E. and S. E. by the Mediterranean, S. W. by Murcia, W. by New Castile, and N. W. by Aragon; area, 8,813 sq. m.; pop. in 1857, 1,246,485. It comprised the modern provinces of Castellon, Valencia, and Alicante, with capitals of the same names. All the principal rivers rise in the country W. of Valencia; the most important are the Guadalaviar, the Jucar and its tributary the Magro, the Alcoy, Palancia, Mijares, Monleon, and Segura. The W. and interior parts of the country are mountainous, while the land upon the coast and on the banks of the numerous rivers is level, but these tracts are nowhere very large. In some places the mountains come close to the sea, and they are generally high and rugged. The Sierra de Penaquila, which terminates in Cape San Martin, traverses the province of Alicante in a N. E. direction. The other ranges are very irregular, but for the most part lie nearly E. and W. The ores of iron, copper, cobalt, quicksilver, lead, and silver are found. The facilities for irrigation afforded by the numerous rivers render Valencia the most fertile district of Spain, and in some places 3 or 4 crops are raised in a year. Wine is produced in large quantities, and is exported together with figs and raisins. Linen, silk, wool, cordage, matting, glass, paper, and earthenware are manufactured.—Under the Moors Valencia formed part of the kingdom of Cordova, but both province and city were taken from them in 1094. The Moors reconquered it in 1101 and erected it into an independent kingdom, but were finally expelled in 1238. It afterward became a province of the kingdom of Aragon, retaining however the title of Reino de Valencia till its division in 1833.—The modern province of Valencia occupies the centre of the ancient kingdom, between Castellon on the N. and Alicante on the S., and bounded W. by Albacete and Cuenca, and E. by the Mediterranean; area, 3,672 sq. m.; pop. in 1857, 606,608. The rivers Guadalaviar and Jucar, flowing into the Mediterranean, intersect it; and the surface is finely diversified by mountains, valleys, and plains. The mountainous districts are clothed with forests of fine timber, and there are valuable marble quarries in the interior and fisheries on the coast. Large numbers of sheep and goats are raised, and heavy crops of rice grow on the lower grounds; but the province is particularly noted for its oil, wine, silk, and fine fruit of many varieties. —Valencia, the capital of the province and of the ancient kingdom, is situated on the river Guadalaviar, about 4 m. from the sea, in lat. 39° 29′ N., long. 0° 24′ W., 190 m. E. S. E.

from Madrid; pop. in 1857, 145,512. It is of a circular form, surrounded by a wall built in 1356, 30 feet high and 10 feet thick, with a road on the summit. The city is entered by 8 gates, some of which have a very picturesque appearance. The river is crossed by 5 bridges, and the suburbs outside the walls are very extensive. The streets, with a few modern exceptions, are crooked and narrow, and the houses are high and have a very gloomy appearance. There is a quay or promenade along the side of the river planted with shade trees. The cathedral was commenced in 1262 and enlarged in 1482; it is a mixture of the Grecian and Gothic styles, and the interior is richly adorned with marble and gilding, and contains many fine pictures. There are 14 other churches, several suppressed convents, 21 nunneries, a Magdalen asylum, 22 hermitages, a college for orphans, an academy of the fine arts, a school of commerce, a college for advocates, and a medical institute. A library containing 11,000 volumes is attached to the episcopal palace. The principal manufactures are silks, linen and woollen goods, hats, leather, glass, paper, artificial flowers, iron ware, and pottery; the exports, different sorts of grain, saffron, and fruit; and the imports, iron, timber, and tropical produce.—Valencia was built by D. Junius Brutus in the latter half of the 2d century B. C., and destroyed by Pompey. The Moors took it from the Goths in 712, and it was captured from them in 1095, after a siege of 20 months. In 1101 they retook it, but were forced to surrender it in 1228 or 1239. In the war of the succession Valencia was strongly opposed to the French, in consequence of which it suffered severely in the reign of Philip V. In 1808 the French attempted to take it; but though it was abandoned by the generals and nobles, the people under Rico, a monk, made a gallant defence, and compelled the enemy to retire with great loss. It was afterward (Jan. 9, 1812) surrendered to Suchet by the Spanish general Blake.

VALENCIA, a city of Venezuela, capital of the province of Carabobo, situated in lat. 10° 10′ N., long. 68° W., 20 m. from Puerto Cabello in the gulf of Triste, and 80 m. W. S. W. from Caracas; pop. about 16,000. It is connected with Puerto Cabello by a good road. The streets are broad and well laid out, and some of the houses regularly built, but the greater part are low and have a poor appearance. The principal church stands in a handsome square, and the market place is of great extent. The surrounding country produces fruits and provisions in great abundance, and large numbers of cattle are fed in the neighborhood. The city suffered from an earthquake in 1812, and subsequently from the protracted war of independence.

VALENCIENNES (anc. *Valentiana*), a fortified town of France, department of Nord, at the confluence of the Scheldt and Ronelle, 27 m. S. E. from Lille, in lat. 50° 21′ N., long. 3° 31′ E.; pop. in 1856, 20,905. It is a military post of the first class, and has a citadel, built by Vauban, on an island in the Scheldt. The chief manufactures are the lace to which the town gives its name, linen, muslins, beet sugar, gold and silver tissues, toys, earthenware, and leather. A statue to Froissart, who was a native of this town, was erected on the Place St. Géry in 1851.—Valenciennes was a residence of the Merovingian kings, became the capital of Hainaut, and was unsuccessfully besieged by Margaret of Hainaut (1254), Louis XI. (1477), and Turenne (1656), but was captured by Louis XIV. in 1677, and its possession was confirmed to France by the treaty of Nimeguen the next year. It was taken by the British and Austrians in 1793 after a siege of 6 weeks, but recaptured by Schérer in Aug. 1794. The allies occupied it from 1815 to 1818.

VALENS, Fabius, a Roman general, born in Anagnia in Latium, beheaded in Urbinum in Sept. A. D. 69. He was of an equestrian family, and was made by Nero legate of the first legion of Germany, where he succeeded in inducing Vitellius to assume the imperial purple and to take up arms against Galba. Together with Cæcina he was intrusted with the conduct of the war, and with a separate army of 40,000 men he began his march through Gaul into Italy in Jan. 69. At Divodurum (Metz) his soldiers in a false alarm massacred 4,000 of the inhabitants. The authority of Vitellius was recognized throughout Gaul, and Valens continued his progress without opposition into Italy, using his vast power to gratify his avarice and lust. At Ticinum there was an insurrection of his soldiers, in which he nearly lost his life. In conjunction with Cæcina he gained the battle of Bedriacum over Otho, who had succeeded Galba, and thus secured the Roman empire for Vitellius; and the latter, entering Rome, raised the two generals, who were exceedingly jealous of each other, to the consulship. Valens being sick on the approach of Antonius Primus, the general of Vespasian, Cæcina marched against him alone, and betrayed the army to the enemy. Valens then set sail for Gaul to raise succors for Vitellius, but on his way was taken prisoner, and, after having been kept a short time in confinement, was slain. Tacitus represents him as exceeding profligate, cruel, avaricious, and venal; and his remaining faithful to Vitellius is almost the only thing mentioned in history to his credit.

VALENS, Flavius, a Roman emperor of the East, born about A. D. 328, killed at Adrianople, Aug. 9, 378. He was one of the *domestici* under the emperor Julian, and in March, 364, was made emperor of the East by his brother Valentinian I. While in Asia Minor in 365 he received news of the usurpation of the throne by Procopius, who was proclaimed emperor at Constantinople in December. Procopius advanced into Asia, defeated Valens under the walls of Chalcedon, and made himself master of Bithynia. In 366, however, the usurper was defeated in two battles, taken prisoner, and put to death. In 367 Valens began a war with the Goths, who had assisted Procopius, and before setting out was baptized by Eudoxus, the Arian bishop of Constantinople. He was at first successful, and in 369 compelled Athanaric, the king of the Goths, to sue for peace. After returning in triumph to Constantinople, he was engaged in a desultory war with the Persians, in which however he confined himself chiefly to the defence of Armenia. In the mean while the Goths, retiring before an invasion of the Huns, were permitted to cross the Danube and settle in the Roman territories. The imperial authorities soon came into collision with them, and Valens returned from Asia to put a stop to their encroachments. A battle was fought near Adrianople, in which the Romans suffered one of the most terrible defeats they ever experienced, and their monarch, never having been seen afterward, was supposed to have been killed. Valens was a weak and cruel prince, and his reign was marked by fierce conflicts between the Arian and Catholic parties.

VALENTIN, Gabriel Gustav, a German physiologist of Jewish descent, born in Breslau, July 8, 1808. He was educated at Breslau, practised medicine there for some years, and in 1845 was invited to a professorship of physiology in the university of Bern. His principal works are: *Handbuch der Entwickelungsgeschichte* (Berlin, 1835); *De Functionibus Nervorum Cerebralium et Nervi Sympathici* (Bern, 1839); *Lehrbuch der Physiologie des Menschen* (2 vols., Brunswick, 1845); and *Grundriss der Physiologie des Menschen* (Brunswick, 1846; enlarged ed., 1855). He has also contributed largely to scientific periodicals.

VALENTINE, Saint, according to some ecclesiastical writers a bishop, according to others a presbyter, who was beheaded at Rome in the reign of the emperor Claudius (A. D. 270), and was early canonized. Wheatley says that St. Valentine "was a man of most admirable parts, and so famous for his love and charity, that the custom of choosing Valentines upon his festival (which is still practised) took its rise from thence." Others derived the custom from birds being supposed to select their mates on this day; others again from a practice prevalent in ancient Rome at the festival of the Lupercalia, held during the month of February, when, among other ceremonies, the names of young women were placed in a box, from which they were taken by young men, according as chance directed. The pastors of the early church, finding it impossible to extirpate this pagan ceremony, changed its form. As once practised, it was the custom on the eve of Feb. 14, St. Valentine's day, to have the names of a select number of one sex put into some vessel by an equal number of the other; and thereupon every one drew a name, which for the time being was called his or her Valentine. The custom of choosing Valentines existed very early, and was much practised in the houses of the gentry in England. There are frequent references to it in Shakespeare.

VALENTINIAN (Valentinianus), the name of three Roman emperors. I. Flavius, born in Cibalis, Pannonia, in A. D. 321, died in Bregetio, Germany, Nov. 17, 375. He was the son of Count Gratian, and early entered the army, where he showed military ability; and on the accession of Jovian in 363 he was made captain of the second company of the guards. On the death of Jovian at Dadastana in Feb. 364, the throne was offered by the army leaders to Valentinian, who was then at Ancyra. He assumed the purple on the plains of Nicæa, Feb. 26, and after reaching Constantinople made his brother Valens associate emperor with the control of the eastern provinces. Valentinian then went to Italy, and for some years was engaged in protecting the frontiers of the empire, which were threatened by the Alemanni, the Saxons, and other barbarian tribes. He first fixed his head-quarters at Paris, and during 366 the Alemanni were defeated by his general Jovinus, the master of the horse. The following winter was spent at Rheims, in building forts and taking other means of defence against the incursions of the Germans. In 367 the Alemanni surprised and plundered Moguntiacum (now Mentz); but the emperor drove them back into their own country, defeating them at a place called Solicinum. In 370 the Saxons, who had made an incursion into Roman territory, were destroyed by an ambuscade. The following years were spent by Valentinian chiefly at Treves, but the winter of 373 was passed at Milan. In 374 he made preparations for a campaign against the Quadi, but died just as he was on the point of setting out. He was one of the ablest of the Roman emperors, but his character was disfigured by passion and cruelty. In his reign polygamy is said to have been allowed in the Roman empire; but the statement is doubtless untrue. He was a Catholic, but did not persecute either Arians or heathens, though stringent laws were enforced against the practice of magic. He was succeeded by his son Gratian. II. Flavius, son of the preceding, born about 371, strangled May 15, 392. Immediately on the death of his father, he was raised by the army to the imperial dignity, being but 4 or 5 years old; and although his brother Gratian consented to this arrangement, and made a partition of the western empire, according to which he had the Gauls, Spain, and Britain, and Valentinian Italy, Illyricum, and Africa, Gratian really exercised the supreme authority over all the territory until his murder in 383. His murderer, the usurper Maximus, did not disturb Valentinian, whose residence was chiefly at Milan, until 387, when he suddenly invaded Italy; and the young emperor with the imperial family fled to Thessalonica to implore the aid of Theodosius. (See Theodosius.) In 388 Theodosius conquered Maximus, and restored to his brother-in-law the empire of the West. The few remaining years of his reign were spent chiefly in Italy and Gaul, in which latter country he became involved in a quarrel with his powerful general Arbogastes, who was seeking to gain the supreme control of his monarch. While at Vienna in Gaul he handed to Arbogastes a paper dismissing him from all his offices; but that general, relying on the support of his creatures, told the prince that his authority did not depend upon the smile or the frown of a monarch, and threw the paper on the ground. A few days later Valentinian was found strangled in his apartment. III. Placidius, born about 419, assassinated in 455. He was the son of Constantius and Galla Placidia, daughter of Theodosius I. After the death of Honorius in 423 he was sent with his mother to Italy, the sovereignty of which country had been usurped by Joannes; and in Oct. 425, he received from the emperor of the East the purple and the title of Augustus. The administration of the government was for a long time really carried on by Placidia, and the first years of his reign were marked by the disastrous rivalry between the last two great Roman generals, Aëtius and Bonifacius, and the consequent loss of Africa. In 437 Valentinian was married at Constantinople to Eudoxia, daughter of Theodosius. In the mean time the extreme provinces of the western empire were gradually attacked on all sides, and the Roman possessions were constantly diminishing in size. In 451 Aëtius defeated Attila near Châlons-sur-Marne; but in 452 the latter invaded Italy, which hitherto had been free from incursions, and after ravaging the north retired. Aëtius was not long afterward killed by Valentinian's own hand, whose feeble mind had long been jealous of the commanding intellect and haughty character of his greatest general. Valentinian himself, the following year, while viewing a spectacle in the Campus Martius, was slain at the instigation of the patrician Petronius Maximus, whose wife the emperor had a short time before violated, and who usurped the throne. Valentinian was the last of the Theodosian line, and his vices were as conspicuous as his mental powers were contemptible.

VALENTINIANS. See Gnostics, vol. viii. p. 321.

VALENTINOIS, Duchess of. See Diana of Poitiers.

VALERIAN (*valeriana*), a perennial herbaceous plant, typical of the natural order *valerianaceæ* of Lindley. The *V. officinalis* (Linn.), has pinnated leaves; the inflorescence corymbed, but by expansion panicled; the flowers small, monopetalous, 5-limbed, funnel-shaped, white, strongly scented; the rootstocks small, short, round or oblong-truncated, with numerous fibres issuing from the crown. It is found growing wild in the meadows of Europe, but cultivated in gardens. The qualities of this plant are best known in medicine, being nervine, tonic, antispasmodic, and employed in nervous affections. The part used consists of the rootstock with its fibres; it is gathered in the autumn or early spring from plants 2 or 3 years old, and which grow in stony and rather dry places. The odor is heavy, and is scarcely impaired by time; to many it is eminently disagreeable. For a long time it was supposed that this was the plant indicated by Dioscorides, until Dr. Sibthorp detected in Greece another species which he called *V. Dioscoridis*, and which is probably the φου of that early writer. The garden valerian (*V. phu*, Linn.), which grows on the European Alps, is also distinct, though considered by Linnæus to be the classical one. They are however all valuable for their potency. The red valerian (*V. rubra*) is admitted into the flower gardens, the blossoms being thought very handsome. There are several other European species; and some closely allied genera indigenous to the East are supposed to furnish the precious spikenard of antiquity.—In the United States there are several species. The wood valerian (*V. sylvatica*, Banks, closely allied to the *V. dioica* of Europe) is found from Newfoundland to the plains among the Rocky mountains and elsewhere in woods in the United States. The few-flowered valerian (*V. pauciflora*, Mx.), with a simple, slender, somewhat decumbent stem, leaves pinnately and ternately divided, flower pale pink, tube of corolla slender, nearly an inch long, may be found along the Alleghany mountains from Virginia to Tennessee and in the western states. The *V. capitata* (Willd.) is 1 to 3 feet high, with leaves 3 to 5-pinnate, corolla whitish or rose-color, flowers in cymes more or less expanded, and nearly allied to the *V. tripteris* of Europe. It is a northern species, and found by Chamisso at Kotzebue's sound, by Richardson on the arctic coast, and in woods at the Rocky mountains by Drummond. The edible valerian (*V. edulis*, Nuttall) has an erect stem, fusiform root, somewhat fleshy, deeply pinnatifid and pinnate leaves, and small white flowers in panicled clusters. The thick and spindle-shaped black roots, though bitter and apparently pernicious, are baked on heated stones or steamed under ground and converted into a pulpy mass, rather agreeable to the taste and not unwholesome; thus prepared, they afford food to the aborigines in the valleys of the Rocky mountains. An allied species, *V. ciliata* (Gray), has a very glabrous, striate, simple stem; somewhat fleshy, glabrous, densely ciliate leaves, the radical ones entire, the cauline 3 to 9-pinnate, parted; flowers in an elongated compound panicle; the fusiform root 6 to 12 inches long, in color and appearance resembling a carrot, but inclined to branch horizontally below, bitter, aromatic, and mucilaginous. It grows in swamps and alluvial prairies of Ohio, Wisconsin, and Upper Canada.—The *valerianaceæ* also comprise many beautiful flowering plants.

VALERIAN (Publius Licinius Valerianus), a Roman emperor, who reigned from A. D. 253 to 260. He was descended from a noble Roman family, and, after having risen by successive steps to the highest honors of the state, was fixed upon by the emperor Decius, who in 251 had determined to revive the censorship, as the fittest person for that post; but he was saved from discharging the unenviable duties of the office by the death of the emperor. By his successor Gallus, Valerian was sent to bring the legions of Gaul and Germany to aid in quelling the rebellion of Æmilianus; but before his arrival Gallus had been slain. His victorious opponent shared the same fate, and Valerian was called to the throne. He immediately associated with himself in the empire his son Gallienus. His whole reign was spent in resisting the assaults made on the empire by the barbarian tribes of Franks, Alemanni, and Goths, and in the East by the Persians. Leaving the defence of the West to his son and to his lieutenant, the emperor marched against the Persian monarch, but was taken prisoner with his army, and the victory of Sapor was followed by the capture of Antioch and the overrunning of Asia Minor. According to the common account, Valerian was constantly exposed to the multitude, clad in imperial purple, and chained, and the Persian monarch placed his foot on his neck whenever he mounted his horse. He died in captivity, and after his death his skin was stuffed with straw, and kept for centuries in the most magnificent temple in Persia. The accounts of Valerian's reign are of the most uncertain and contradictory character, and the chronology is especially beset with difficulties. He was succeeded by his son Gallienus.

VALERIUS CORVUS, Marcus, a Roman general, born about 371 B. C., died about 271. In 349, being tribune under Camillus in his campaign against the Gauls, he accepted the challenge of a gigantic barbarian to single combat, and killed his antagonist with the assistance of a raven which perched upon Valerius's helmet, and as often as he advanced upon his foe flew at the Gaul's face. A general battle then ensued, in which the Romans were completely victorious. From this circumstance Valerius derived his surname of Corvus (a raven). He was made consul the next year, and the same honor was conferred upon him 5 times afterward. In his 3d consulship, at the age of 29, he gained two brilliant victories over the Samnites at Mount Gaurus and at Suessula. In 342 he was appointed dictator in consequence of a mutiny in the army, which he quelled by his personal popularity. He was dictator again in 301, when he defeated the Marsi and Etruscans. The last 28 years of his life were passed in retirement. He held curule dignities 21 times, repeatedly enjoyed the honors of a triumph, and is frequently referred to by the Roman writers as a memorable example of the favors of fortune.

VALERIUS FLACCUS, Caius, a Latin poet, born in Padua, flourished in the time of Vespasian. Nothing is known of his life, and his only work now extant is the unfinished heroic poem called the *Argonautica*, in which he narrates the adventures of Jason and his companions. His style is unaffected, his versification harmonious, and his diction pure and polished; and Wagner even places him next to Virgil among the Latin epic poets, an opinion in which few modern critics coincide with him. The best editions are those of Burmann (Leyden, 1724) and Lemaire (Paris, 1824).

VALERIUS MAXIMUS, a Roman author, who flourished during the reign of Tiberius. Nothing is known of his life except that he accompanied Sextus Pompey into Asia. His name is appended to a collection of historical anecdotes under the title of *De Factis Dictisque Memorabilibus Libri IX.* The compilation embraces a large variety of subjects, and as a historical authority is of some value. Though the author lived during the reign of the first emperors, the style is so very poor that Erasmus said the Latin bore no more resemblance to that of Cicero than a mule does to a man. Abridgments of the work were made by Titus Probus, Julius Paris, and Januarius Nepotianus. Those of the two last named were discovered by Cardinal Mai in the library of the Vatican. Appended to the work of Valerius Maximus is a fragment entitled *De Nominibus*, *Prænominibus*, *Cognominibus*, *Agnominibus*, *Appellationibus*, *Verbis*, of which the first chapter only is extant. It professes to be an epitome made by Julius Paris, but probably it had no connection with the work of Valerius. The best editions of Valerius Maximus are those of Torrenius (4to., Leyden, 1726) and C. Kempfius (8vo., Berlin, 1854). The work was translated into English by W. Speed (8vo., London, 1698).

VALERIUS PUBLICOLA. See Publicola.

VALETTA, or La Valetta, a seaport town, capital of the island of Malta, situated on the N. E. coast, in lat. 35° 54′ N., long. 14° 31′ E.; pop. estimated at 30,000. It occupies an elevated peninsula between two harbors, the one on the E., called the Great harbor, extending about 2 m. inland. It is strongly fortified; the forts St. Elmo, Ricasoli, St. Angelo, Tigne, and Manuel command the approach by sea, and 5 lines of fortifications, mounting 1,000 guns, and hornwork, extend across the isthmus. The ground upon which it stands is very uneven, and the streets are connected by flights of steps. The cathedral was built in 1580, and is exceedingly interesting from the number of monuments in marble and bronze, paintings, and curious relics which it contains. The keys of Jerusalem, Acre, and Rhodes are deposited in it. There are 19 other churches. The palace of the grand master of the knights of St. John is now occupied as the governor's residence. It contains a corridor hung with the portraits of the knights; an armory with many kinds of ancient armor and 10,000 muskets; and a library and museum adjoining. The university was founded toward the close of the 18th century, and has faculties of divinity, law, medicine, and arts. There are naval, military, and civil hospitals. The other buildings most worthy of notice are the exchange, theatre, several *auberges* or separate palaces of the knights, many of them fine specimens of architecture, the house of industry, and the great aqueduct which conveys water into the town from Citta-Vecchia, 8 m. distant. The botanic garden is situated in the suburb of Floriana; the burial grounds have been formed out of the bastions of the fortifications which surround the town. A large dry dock, capable of receiving the largest ships and war steamers, has recently been constructed at a cost of £100,000. Ship building is carried on at the suburb of Sanglea. The trade is not of great importance except during war, when Valetta becomes a centre for a great deal of the commerce of the Mediterranean. Corn, wine, and oil are imported from Italy and Sicily, and cattle and horses from Barbary, Greece, and Albania. Steam communication is maintained regularly with England by the vessels from Alexandria carrying the India, China, and Australian mails; and with France by both the French and English steamers which ply between Marseilles and Alexandria, and by another line between Marseilles, Leghorn, Smyrna, and Constantinople.—The city was founded in 1565 by La Valette, grand master of the knights of Malta, after the memorable siege of Malta by the Turks. (See Valette.) It remained in possession of the order till 1798, when it was taken by the French under Bonaparte, who were in turn expelled in 1800 by the English, who have since held it.

VALETTE, Jean Parisot de La, grand master of the knights of Malta, born in 1494, died in Malta, Aug. 21, 1568. He was chosen grand master unanimously in 1557. The assistance which he rendered to some of the Christian nations in their wars against the Turks, and the rapid growth of the power of the order under his vigorous administration, induced the sultan Solyman the Magnificent to fit out an expedition for the reduction of the island. One hundred and fifty-nine Turkish vessels of war, with 30,000 troops on board, cast anchor in the gulf of Mugiarro, May 18, 1565. La Valette had made every preparation to receive them. He had planned new fortifications and labored himself in their construction. His garrison consisted of only 700 knights and 8,000 soldiers, including the inhabitants who had been armed for the occasion; yet with these he withstood one of the most dreadful sieges on record until Sept. 6, when, on the arrival of the viceroy of Naples with 8,000 men for his assistance, the Turks took to their ships. Ashamed of such a precipitate retreat, they disembarked again, but were defeated by the Christians with great slaughter and fled in disorder. Their loss during the siege is said to have been 30,000 (they had several times been reënforced); while the knights, on the departure of the Turkish fleet, had barely 600 men left, including the armed inhabitants. La Valette subsequently rebuilt the fortifications ruined by the siege, and founded in their neighborhood the town of Valetta, to which he removed the residence of the knights from Citta Vecchia. He was offered a cardinal's hat by Pius IV., but refused it.

VALHALLA. See Mythology, vol. xii. p. 81.

VALLA, Lorenzo, an Italian scholar, born in Rome in 1406, died there in 1457. In 1435 he went to Naples, where he taught rhetoric and gained the friendship of King Alfonso I. Some years later he became a canon of the church of St John Lateran at Rome; but his free criticism of classical authors made him many enemies, and upon the command of the pope to quit the city, he returned to Naples, and in 1443 was appointed private secretary to the king. About the same period he became involved in a theological dispute, and was summoned by the archbishop of Naples before an assembly of all the clergy of that city and condemned to be burned alive. He evaded execution by a declaration that he believed every thing the church required, and went to Rome to justify himself before the pope and the cardinals. In this he succeeded so well that he was treated with great distinction, appointed professor of rhetoric with a good salary, restored to his place of canon of St. John Lateran, and made secretary to the pope. Among his works are: *Elegantiæ Sermonis Latini; Notæ in Novum Testamentum, sive de Collatione Novi Testamenti;* and translations into Latin of Thucydides, Herodotus, and the Iliad.

VALLADOLID, a N. W. province of Spain, in Old Castile (by some included in the kingdom of Leon), bounded by Leon, Palencia, Burgos, Segovia, Avila, Salamanca, and Zamora; area, 2,536 sq. m.; pop. in 1857, 244,023. The surface, though elevated, is generally level, and the soil is sandy. The principal rivers are the Douro, Duraton, Eresma, Pisuerga, Esqueva, Cega, Valderaduey, and Cea. The province produces grain, red and white wine, flax, hemp, madder, and timber. There are excellent pastures, upon which horses, horned cattle, sheep, and mules are fed. Paper, earthenware, and various fabrics of hemp, flax, and wool, are manufactured.—Valladolid, the capital, is situated on the left bank of the Pisuerga, at the terminus of the canal of Castile, in lat. 41° 39′ N., long. 4° 42′ W., 100 m. N. W. from Madrid; pop. about 30,000. It stands in the midst of an extensive plain, and is surrounded by an earthen wall. The cathedral was commenced by Philip II., and has never been completed; it has a Doric façade, with an arch over the principal entrance 50 feet by 24. There are 20 other churches, 24 convents, and 18 nunneries. The Dominican convent and the college of St. Gregory are fine specimens of Gothic architecture. The university was founded by Alonso XI. in 1346, and is attended by 1,300 students. There are several colleges, a museum with the statues, pictures, and other works of art which were removed from the suppressed convents, a royal palace, a theatre, a lyceum, and a public library of 14,000 volumes. Silks, lace, paper, woollens, and earthenware are manufactured, and there is some trade in corn and silk.—Valladolid was called Belad-Walid by the Moors, from whom it was taken by Ordoño II. of Leon in 920. In the beginning of the 15th century it was the capital of Castile, and was considered its finest town; and when the court removed to Madrid in 1560 the population of Valladolid was 50,000. An attempt made by Philip III. to restore the ancient capital failed, and its gradual decline was much accelerated by the French invasion.

VALLADOLID, a state of Mexico. See MICHOACAN.

VALLADOLID, a town of Mexico, capital of a department of the same name in the state of Yucatan, 90 m. E. S. E. from Merida; pop. about 15,000. The streets are well laid out and clean, and the houses are generally one story high with flat roofs, each having a little flower garden in front. There are several churches, one of which is a handsome edifice, a town house, and an aqueduct which supplies the town with water. The climate is considered remarkably healthy, and the town is much resorted to by invalids from other places. There are some manufactures, principally cotton; but the trade is not of much importance.

VALLADOLID, a town of Honduras. See COMAYAGUA.

VALLAURI, TOMMASO, an Italian philologist and historian, born in La Chiusa di Cuneo, Piedmont, Jan 23, 1805. He studied at the university of Turin, where while still young he became professor of rhetoric, in 1838 adjunct professor of Greek and Latin eloquence, and in 1843 titular professor of the same branches. He was admitted a member of the college of sciences and letters in 1833. He has published several works on the literary history of Piedmont; a history of the universities of the same country; *Fasti Rerum Gestarum a Rege Carolo Alberto* (Turin, 1843); a history of the house of Savoy (1845–'6); *Historia Critica Literarum Latinarum* (1849); a collection of the works of the Latin classical historians (1850 *et seq.*); a revised edition of Bazzoni's Latin and Italian dictionary (1850 *et seq.*); a Latin and Italian dictionary for the use of schools (1852); and editions of Ausonius de Popma *De Differentiis Verborum* (1852), and the *Aulularia* (1853) and *Miles Gloriosus* (1854) of Plautus.

VALLE, PIETRO DELLA, an Italian traveller, surnamed Il Pellegrino, born in Rome, April 2, 1586, died there, April 20, 1652. He was descended from an ancient and noble family, and received a liberal education; but when after the death of Henry IV. a war seemed likely to arise, he left his studies to engage in military life. Disappointed in his expectations, he joined in 1611 a Spanish fleet about to make a descent upon the coast of Barbary; but as, according to his own account, they had scuffles and not battles, he returned to Rome. There the result of a love affair in which he had been unsuccessful determined him to travel, and in June, 1614, he embarked from Venice in the habit of a pilgrim. He went first to Constantinople, where he learned the Turkish language, visited Egypt and the Holy Land, and at Bagdad married a young Nestorian or Chaldean lady. Accompanied by his wife, he journeyed over Mesopotamia, and finally went to Ispahan, was presented to the shah of Persia, and engaged in the war then going on between that country and Turkey. In this he acquired no great glory, and while living on the shore of the Persian gulf his wife died. Embalming her body, he took it home with him, travelling through India, and, after a year's journey, arrived at Rome in March, 1626. He was presented to Pope Urban VIII., and made honorary chamberlain. Della Valle presented to the pontiff a short account of Georgia, in order to induce him to send missionaries to that country. In the spring of 1627 he celebrated the obsequies of his wife, pronouncing upon the occasion a funeral oration, and during its delivery his emotion became so violent as to choke his utterance. According to some authors his auditors were also affected to tears, according to others they laughed. Not long afterward he married a young Georgian, whom he had brought with him from the East, and spent his time in affluence at Rome, until in a fit of anger he killed his coachman in the area before the church of St. Peter's while the pope was pronouncing a benediction. He fled to Naples, but the offence being overlooked at Rome, he returned. His travels, written in the form of letters, were published at Rome in 1650 in 4 vols. (English translation, fol., London, 1665). Several other works were composed by him, many of which were never published. His narratives, though complained of by Gibbon on account of their insupportable vanity and prolixity, are very accurate. By Southey he is called "the most romantic in his adventures of all true travellers."

VALLIÈRE, MLLE. DE LA. See LA VALLIÈRE.

VALLISNERIA, a genus of aquatic plants of the natural order *hydrocharidaceæ*, named by Micheli in honor of Antonio Vallisnieri, an Italian naturalist of the 17th century. The flowers are strictly diœcious; the sterile ones are numerous and crowded on a spadix, with the corolla monopetalous with 3 segments; the fertile are included singly in a spathe and seated on a spiral peduncle, the calyx a single leaf, the corolla polypetalous, the capsule 1-celled and many-seeded. The most common species is the *V. spiralis*, found both in Europe and the United States, in slow-running streams and fresh water rivers. It has long, thin, linear, ribbon-shaped leaves, 1 to 2 feet or more in length, which are obscurely serrulate, obtuse, nerved and netted-veined. The plant is interesting on account of the curious mode of its fertilization. As both sorts grow under water and apart, the barren flowers are separated from the fertile. When the anthers are ready to open, the male blossoms break from their short peduncles and rise to the top of the water, where they encounter the female blossoms, which are continually kept at the surface by the twisting or uncoiling of their long stems as the streams are shallower or deeper. The roots, which are white and similar to the root fibres of celery, are a favorite food of the canvas-back duck (*fuligula vallisneriana*), and where this plant abounds the flocks of canvasbacks periodically resort.—Some other species of little direct economical value are known as natives of New Holland and the East Indies.

VALLISNIERI, Antonio, an Italian naturalist, born in Tresilico, Modena, May 3, 1661, died in Padua, Jan. 12, 1730. He studied medicine under Malpighi at Bologna, and in 1688 commenced practice as a physician in Reggio. In 1700 his great reputation as a naturalist procured him an invitation to fill a medical professorship in the university of Padua, where he excited the opposition of his coadjutors by his efforts to reform the prevailing system of practice. He was indefatigable in his efforts to advance the knowledge of natural history, and was well known in his day by his researches on the various systems of generation, one of which, that of spontaneous generation, he devoted much attention to refuting. As a physician he was one of the first to use Peruvian bark. His complete works were published at Venice in 1733 (3 vols. fol.).

VALLOMBROSA (Lat. *vallis umbrosa*, "shady valley"), an abbey situated in a valley of the Apennines about 18 m. from Florence. It was founded by St. John Gualberto about 1038, under the rule of St. Benedict, and the institution was approved by Pope Alexander II. in 1070. The original purpose of the founder was to establish separate hermitages, but a monastic mode of life soon began to prevail, and the Vallombrosians are now recognized as a branch of the reformed Benedictines. In 1500 they exchanged their gray habit for a brown one, and in 1662, on their union with the Silvestrines, adopted a black dress. The abbey has acquired celebrity from its romantic situation, and as a place of refuge for French priests during the first revolution. The present magnificent buildings were erected in 1637. The abbey is wealthy, and is frequently visited by travellers. The order is strictly contemplative. It was the first to admit lay brethren.

VALMIKI, a Hindoo poet, the reputed author of the *Ramayana*. (See Sanscrit Language and Literature.) According to the national legend, he was an inspired solitary, and was induced to write the exploits of Rama by the glowing account given him of that hero by Naruda, the divinity of music and poetry. While he was meditating on his work, a swan fell at his feet pierced by the arrow of a hunter. The poet burst into an imprecation on the huntsman, and in so doing unconsciously invented a new kind of metre which he called *sloka*, composed of distichs in which each verse consisted of 16 syllables, with a cæsura in the middle. Brahma, who had overheard him with delight, thereupon appeared to Valmiki, and ordered him to write his poem in the new measure. The *Ramayana* contains 24,000 *slokas*, divided into 7 books. A complete edition was edited by G. Gorresio (10 vols., Paris, 1843–'58).

VALOIS, House of, a younger branch of the Capetian dynasty, which occupied the throne of France 261 years, from 1328 to 1589. On the death of Charles IV., the last of the direct line of Capetians, his cousin Philip of Valois, the grandson of Philip III. and great-grandson of Louis IX., was acknowledged king as the next male heir, thus excluding, by virtue of the Salic law, the female claimants of the crown. His direct successors were John (1350–'64), Charles V. (1364–'80), Charles VI. (1380–1422), Charles VII. (1422–'61), Louis XI. (1461–'83), and Charles VIII. (1483–'98). The last named, dying without male issue, was succeeded by his cousin Louis of Orleans, the great-grandson of Charles V., who ascended the throne as Louis XII. (1498–1515). Like his predecessor, he left no son, and had for his heir his cousin Francis of Angoulême, the offspring of a younger branch of the family of Valois-Orleans, who became King Francis I. (1515–'47). After him his son, Henry II. (1547–'59), and his 3 grandsons, Francis II. (1559–'60), Charles IX. (1560–'74), and Henry III. (1574–'89), held the sceptre, which, on the demise of the last, passed into the hands of the Bourbon family, under Henry IV. These two centuries and a half are among the most disastrous in the history of France. Nearly the first half of this period was occupied by the bloody wars with England, during which the French lost the battles of Crécy, Poitiers, and Agincourt, and were only saved by Joan of Arc and the impulse her example gave to national resistance; then came the Italian wars, in which the French, notwithstanding many brilliant deeds of bravery, were finally worsted, and the contest with the house of Austria, which brought about the captivity of Francis I. and so many other disasters, and ended by the peace of Cateau Cambrésis in 1559; and last, not least, the religious civil wars which desolated France for nearly 40 years, and were only ended by the policy and personal valor of Henry IV.

VALPARAISO, a province of Chili, bounded N. by the river Aconcagua and W. by the Pacific; area, 2,642 sq. m.; pop. in 1854, 116,043. The soil, where not carefully irrigated, is of poor quality, except in some of the valleys. Rain seldom falls. There are no large rivers, and the principal towns, beside the capital, are Quillota and Casa Blanca.—Valparaiso, the capital, is situated on the bay of the same name, 90 m. W. N. W. from Santiago, in lat. 33° 2′ S., long. 71° 45′ W.; pop. in 1854, 52,413. It is the chief port of the republic, and is built principally upon a narrow strip of land at the foot of a cliff at the head of the bay. The streets are narrow but well paved, and the houses are nearly all two stories high, ornamented with neat balconies and gayly painted. The custom house and several of the government stores and public buildings are very handsome edifices. The news room, which occupies the same building with some public offices, and spans the road leading from the mole into the town, is particularly worthy of notice. The bay is well sheltered from all quarters except the N., but is considered a dangerous anchorage during the winter months, when northerly gales are frequently experienced. Vessels upon arrival have to anchor in from 70 to 80 fathoms; while in the inner tier next the town the depth is not less than 20 to 25 fathoms. The bay is defended by 3 forts and a water battery. The town has suffered severely upon several occasions from earthquakes, and in 1822 it was nearly destroyed. The trade is very considerable, and has been greatly increased of late years. The exports comprise copper and copper ore, silver, gold, wheat, flour, tallow, hides, wool, and other articles; and the imports, cotton, silk, and woollen goods, clothing, hardware, iron, sugar, wines, spirits, tobacco, tea, coffee, &c. The commerce is nearly all in the hands of the English, Americans, and French. The number of vessels entered in 1859 was 1,049, tonnage 332,756, and the departures 1,037, tonnage 325,463; total imports, $16,765,787; exports, $8,949,216. The arrivals and departures of United States vessels in 1860 were 148, tonnage 87,643; value of inward cargoes, $8,225,398; outward, $2,447,398, of which nearly ⅔ was reëxports. But a small part of the American trade is direct, most of the voyages being from and to other foreign ports. Valparaiso is much frequented by ships in want of provisions. A railway is in course of construction to connect Valparaiso with Santiago, and about ⅔ of it has been opened for traffic. A steam mail service is maintained with Europe by an English company *via* Panama.

VALONIA. See Oak, vol. xii. p. 456.

VALTELLINA, or Sondrio, a circle of the government of Milan while Lombardy was a province of Austria, and now included in the district of Gallarate in the province of Milan, kingdom of Italy. Its area when an Austrian circle was 1,258 sq. m.; pop. 85,000. It consists of a large valley, on the confines of Switzerland and the Tyrol, shut in between two spurs of the Alps, and is drained by the Adda, which flows through the whole length of the valley. In the W. part is Lake Chiavenna, formed by the Maira. The climate is mild, but insalubrious on account of the marshes formed by the Adda and Maira. The vine is extensively cultivated in the valley, and there are considerable crops of hemp and chestnuts. Bees and silkworms are also reared in great numbers. The hill slopes afford fine pasturage for cattle, of which many are raised for market. There are warm springs at Bormio and Masino, and acidulous waters at Sta. Caterina in the Val Furva. There are also several quarries of marble, slate, and soapstone, and some iron mines. The principal town is Sondrio.

VAMPIRE, in zoology. See Bat.

VAMPIRE, a fabulous creature, which was widely believed in previously to and during the 18th century in Greece, Hungary, Moravia, Silesia, Poland, and Russia. Vampires are defined by Dom Calmet as persons "who have been dead a considerable time, sometimes more, sometimes less; who leave their tombs, and come and disturb the living, sucking their blood, appearing to them, making a noise at their doors and in their houses, and often causing their death." They usually, he informs us, visit their relatives and those in the prime of life and full health and vigor. The belief in vampires is probably of oriental origin; the ghouls of the Persians and Arabians seem to belong to the same family, though the superstition had been modified by Christianity. In the latter part of the 17th and the first half of the 18th century, the plague and other fatal epidemics had prevailed in the countries we have named; and the sudden death of many persons from languor and exhaustion was attributed by their relatives and others to the blood having been drawn from them by these vampires, who had themselves died shortly before of the prevailing diseases. In hundreds of cases, the bodies of alleged vampires were disinterred, and in some the body was found not decayed, the complexion fresh, and liquid blood still in the veins. A sharpened stake was driven through the body, the heart taken out and the head removed, and both reduced to ashes. It was alleged that in some cases the body uttered a shriek when the stake was driven through it. The undecayed condition of the bodies, which was probably the result either of their burial alive, which often happened during the prevalence of severe epidemics, their peculiar condition after death from plague, resisting ordinary decay, as has been demonstrated in yellow fever, or the presence of antiseptic qualities in the soil in which they were buried, was regarded as positive proof of their having been vampires. In Poland, the name given to these night visitors is *upior*; in Russia, *googooka;* in Slavonia, *oopir.*—See Ranft, *Tractät von dem Käuen und Schmatzen der Todten in Gräbern* (Leipsic, 1734); Dom Augustine Calmet, *Dissertation sur les vampires* (1747), which passed through 5 or 6 editions prior to 1757, and was reprinted in London in 1850 as the second volume of "The Phantom World," with notes by the Rev. H. Christmas; Lenglet-Dufresnoy, *Traité historique et dogmatique sur les apparitions*, &c. (Avignon, 1751); and the marquis de Maffei, "Letter on Magic."

VAN ACHEN, Hans. See Achen.

VANADIUM, a metal first recognized as distinct in 1801 by Del Rio, who found it in the brown lead ore, now known as vanadinite, of Zimapan in Mexico, and called it erythronium. It was generally considered by chemists, however, to be nothing more than chromium, and Del Rio himself finally adopted this opinion. In 1830 Sefström found the iron manufactured from the magnetic ore of Taberg in Sweden, as well as the cinder produced in its conversion, to contain a peculiar metal, which he called vanadium, from Vanadis, one of the names of the Scandinavian goddess Freyja; and the Zimapan lead ore was afterward proved to contain the same metal. Vanadium is white, resembling silver and molybdenum, not ductile, a good conductor of heat and electricity, infusible at the highest temperatures of our furnaces, not oxidized by fused hydrated alkalies, easily soluble in nitric acid and aqua regia, giving a fine blue solution, but attacked with great difficulty by sulphuric, hydrochloric, or hydrofluoric acid. The symbol is V, and its chemical equivalent 68.6. It is prepared by heating vanadic acid in a charcoal crucible at the highest heat of a blast furnace, when a part of the exterior is reduced; by reducing vanadic acid by heating with potassium; or by passing a current of dry ammonia through a bulb containing terchloride of vanadium saturated with ammonia and heated by a spirit lamp, chloride of ammonium being formed and volatilized, and the metal remaining in the bulb. It forms three oxides, VO, VO_2, and VO_3 or vanadic acid, beside several intermediate ones, remarkable for their fine green and purple tints. VO_2 forms salts with many acids, which in solution are bright blue, and when anhydrous, brown or green. Vanadic acid combines with most of the bases, and also with many inorganic and organic acids. These last combinations are red or yellow, and crystallize easily. Vanadium also forms compounds with phosphorus, sulphur, iodine, bromine, chlorine, and fluorine, and alloys with several of the metals. The principal natural compounds of vanadium are dechenite, descloizite, and vanadinite (all vanadates of lead), volborthite (vanadate of copper and lime), several other vanadates containing copper and lead, and aræoxene (vanadate of lead and zinc). The metal occurs in small quantity in several different iron ores, in cryolite from Greenland, in aluminous schists from the south of France, in some rutiles, cerites, and pitchblendes, and in the bituminous slates, containing copper, at Mansfeld in Germany. In the United States the principal localities of vanadium minerals are at the Wheatley mine, Phœnixville, Penn., where several vanadates of lead occur, and at the Cliff mine, Lake Superior, where a chocolate-colored clayey mineral is found, containing vanadium in a state of combination not determined.

VANAYL DE YONGH. See Saint Elme.

VANBRUGH, Sir John, an English dramatist and architect, born probably in London in 1666, died there, March 26, 1726. He was of Flemish extraction, and received a liberal education, which was completed in France. Returning to England, he entered the army as an ensign, and probably attained the rank of captain, as he is frequently designated by that title by contemporary writers. It is not known how long he remained in the service, or where or when he prepared himself for his profession of architect, although it has been supposed that his residence in France may have supplied him with the necessary hints. In 1695 he was appointed secretary to the commission for endowing Greenwich hospital, on the nomination of John Evelyn, and two years later produced at Drury Lane theatre his first play, "The Relapse," which proved very successful. "The Provoked Wife," performed at the theatre in Lincoln's Inn Fields in 1698, had if possible a greater run; and in the same year the author, alarmed at the charges of indecency and profanity brought against him in Jeremy Collier's "Short View of the Immorality and Profaneness of the English Stage," presented the public with a moral lecture, in the form of a comedy entitled "Æsop." The town had little relish for this sort of entertainment, and after a few nights' performance at Drury Lane it was withdrawn. An adaptation of Fletcher's "Pilgrim," produced in 1700, was well received. In 1702 he made his first architectural design of celebrity, that of Castle Howard in Yorkshire, the seat of the earl of Carlisle, who, being at that time acting earl marshal of England, made Vanbrugh Clarencieux king-at-arms. His next enterprise was the construction of a large theatre in the Haymarket, which he undertook to manage in conjunction with Congreve, and the expense of which was defrayed by £100 subscriptions from persons of quality. The building, when completed, was found to be incurably defective in acoustic properties, and Vanbrugh, after producing with indifferent success one of his best plays, "The Confederacy," and adaptations of 3 of Molière's comedies, was glad to retire from the enterprise, and devote himself to the great structure of Blenheim, voted by parliament to the duke of Marlborough, which, notwithstanding its faults, is perhaps the most imposing private residence in England. Before the completion of the work he became involved in a quarrel with the duchess ("the wicked woman of Marlborough," as he calls her), who, after the duke's decease, dismissed the architect and refused to pay him £2,000 which he had advanced to the workmen. By the aid of Sir Robert Walpole, however, he succeeded in getting the money, "in spite of the hussy's teeth." Vanbrugh erected a number of other buildings of less note, was knighted in 1714, and in 1716 was made comptroller of the royal works and surveyor of the works at Greenwich hospital. He left an unfinished comedy, "The Journey to London," which was completed by Colley Cibber. The massive character of his architecture was much ridiculed by the small wits of the day, one of whom, Dr. William Evans, produced the well known couplet, forming the concluding lines to an epitaph on Vanbrugh:

Lie heavy on him, Earth, for he
Laid many a heavy load on thee.

But according to Sir Joshua Reynolds, his designs have great poetic beauty as well as invention. His plays are smoothly written, and present amusing pictures of contemporary manners, but their grossness has gradually banished them from the stage. Vanbrugh was a man of fine appearance and amiable character. His wife survived him 50 years, dying in 1776 at the age of 90. The best recent edition of his plays is that of Moxon (8vo., London, 1849, containing also the works of Congreve, Wycherly, and Farquhar), to which is prefixed a biographical notice by Leigh Hunt.

VAN BUREN. I. A S. W. co. of Mich., bordering on Lake Michigan, and drained by the Pawpaw and Dowagiac rivers, and the south branch of Black river; area, 633 sq. m.; pop. in 1860, 15,224. The surface is generally level and the soil fertile. The productions in 1850 were 75,083 bushels of wheat, 131,890 of Indian corn, 34,388 of oats, 49,991 of potatoes, and 3,582 tons of hay. A large portion of the county is covered with forests of valuable timber. It is intersected by the Michigan central railroad. Capital, Pawpaw. II. A S. E. co. of Iowa, bordering on Missouri, intersected by Des Moines and Fox rivers; area, 468 sq. m.; pop. in 1860, 17,033. The surface is level and consists of prairie and timber land, and the soil is highly fertile. The productions in 1859 were 530,646 bushels of Indian corn, 39,724 of wheat, 283,828 lbs. of butter, 31,490 of wool, 18,159 tons of hay, and 11,024 galls. of sorghum molasses. In 1850 there were 7 churches, 2 paper mills, 4 woollen factories, 1 newspaper office, and 2,000 pupils attending public schools. Bituminous coal abounds. The county is intersected by the Keokuk, Des Moines, and Minnesota railroad. The Des Moines river is navigable for steamboats a portion of the year. Capital, Keosauque. III. A central co. of Ark., intersected by Little Red river; area, 1,260 sq. m.; pop. in 1860, 5,357, of whom 200 were slaves. The surface is undulating, and the soil fertile. The productions in 1850 were 154,565 bushels of Indian corn, 15,631 of oats, and 13,661 lbs. of butter. There is a great abundance of choice timber. Capital, Clinton. IV. A central co. of Tenn., drained by the Caney fork of Cumberland river; area, 350 sq. m.; pop. in 1860, 2,581, of whom 239 were slaves. The surface is generally mountainous and the soil tolerably fertile. The productions in 1850 were 131,890 bushels of Indian corn, 11,800 of oats, 23,886 lbs. of butter, and 4,634 of wool. Bituminous coal is abundant. Capital, Spencer.

VAN BUREN, Martin, the 8th president of the United States, born at Kinderhook, Columbia co., N. Y., Dec. 5, 1782, died there, July 24, 1862. His father was a farmer, and his early education was acquired at the academy of his native village. At the age of 14 he commenced the study of law, and was admitted to the bar in 1803, the last year of his studies having been passed in the office of W. P. Van Ness, in the city of New York. Always deeply interested in public affairs, he had served at the age of 18 as a delegate in a nominating convention of the republican, or, as it was later called, the democratic party. Though maintaining friendly personal relations with Aaron Burr, from whom he had received marked attentions, he nevertheless cast his first vote against him when in 1804 he appeared as an aspirant to the office of governor of the state against Morgan Lewis, the regular candidate of the democratic party. In 1808 he was appointed by the governor surrogate of Columbia co. In 1812 he was elected to the senate of the state, and in that body voted for electors pledged to support De Witt Clinton for president of the United States. The war of 1812-'13 found in him an earnest advocate. In 1815 he became attorney-general of the state, and in 1816 he was again a member of the senate, the two offices being held together. In 1818, having long since become estranged from De Witt Clinton, Mr. Van Buren set on foot a new organization of the democratic party in the state, and himself became the ruling spirit of a coterie of able politicians, among whom B. F. Butler, W. L. Marcy, and Edwin Croswell were afterward prominent, by whom the political control of the state was uninterruptedly exercised for more than 20 years. In 1819 he was removed by the Clintonian council of appointment from his office of attorney-general. In 1820 he advocated the reëlection of Rufus King to the U. S. senate, and concurred in the legislative resolution instructing the senators and representatives of the state in congress to resist the admission of Missouri as a slave state. In Feb. 1821, defeating both Clintonians and federalists in the legislature, he was chosen to the U. S. senate; and a few months later was elected to represent the county of Otsego in the convention to revise the state constitution. In the latter body he advocated an extension of the elective franchise, but opposed universal suffrage, as also the plan of appointing justices of the peace by popular election. He voted against depriving colored citizens of the franchise, but supported the proposal to require of them a freehold qualification of $250. In 1824 he advocated the election of Mr. Crawford to the presidency, and became a leader in the opposition to Mr. J. Q. Adams, the successful candidate. In 1827 he was reëlected to the U. S. senate, but resigned that office on being chosen governor of New York to fill the vacancy caused by the death of Mr. Clinton in 1828. As governor he proposed the safety fund banking system. (See Bank, vol. ii. p. 581.) In March, 1829, he became secretary of state in the administration of President Jackson, but resigned on April 7, 1831, for the reason that circumstances beyond his control had placed him before the country as a candidate for the presidency, a position in his judgment incompatible with the proper discharge of the duties of a cabinet minister. Appointed minister to England, he arrived in that country in September; but his nomination to the office, submitted to the senate in December, was rejected by that body after an animated debate, in which Messrs. Clay and Webster, whig leaders, were seconded by the friends of Mr. Calhoun, then vice-president. The grounds of the rejection were stated to be, that while secretary of state Mr. Van Buren had instructed Mr. McLane, U. S. minister to England, to beg from that country as a favor certain concessions in regard to trade with her colonies in the West Indies, which he should have demanded as a right; that in fact he had taken the side of England in that matter against the United States; and finally that he had carried our domestic party contests and their results into diplomatic negotiations with foreign countries. This event occasioned much excitement, especially among the members of the democratic party, who regarded it as mere political persecution. It was followed on May 22, 1832, by the nomination of Mr. Van Buren for the vice-presidency by the same democratic national convention which nominated Gen. Jackson for reelection to the presidency; and in the subsequent election Mr. Van Buren received the electoral votes of all the states which voted for Gen. Jackson, with the exception of Pennsylvania, whose electors cast their suffrages for William Wilkins. Mr. Van Buren thus became president of the senate, which a few months before had condemned him; and when he left that office all parties agreed that he had discharged its functions with dignity, courtesy, and impartiality.—It had long been known that he was the favorite candidate of his party for the station which President Jackson was to vacate in March, 1836. The national convention which met at Baltimore on May 20, 1835, unanimously nominated him for the presidency, and in the ensuing election he received from 15 states 170 electoral votes, while his principal antagonist, Gen. Harrison, received 73, Mr. Hugh L. White 26, and Mr. Webster 14. In his inaugural address on March 4, 1837, he declared his "firm belief that the perpetuity of our institutions depends upon ourselves; that if we maintain the principles on which they were established, they are destined to confer their benefits on countless generations yet to come; and that America will present to every friend of mankind the cheering proof that a popular government wisely formed is wanting in no element of endurance or strength." At the same time he appealed to the people not to be led into agitation concerning "the domestic institution of slavery;" and proclaimed that he should veto any bill for the emancipation of the slaves in the District of Columbia against the wishes of the slaveholding states, and also any bill interfering with slavery in the states where it then existed. But it was soon apparent that the great difficulty of his administration was not to grow out of any cause connected with this subject. The country, for some time a prey to pecuniary excitements and embarrassments, was now involved in a crisis of unprecedented severity. Commerce and manufactures were prostrate; hundreds of wealthy mercantile houses in every quarter had fallen into hopeless bankruptcy; imposing public meetings attributed these disasters to the policy of the government; and two months after the president's inauguration the crash was consummated by the universal suspension of specie payments by the banks. Finally, on May 15, he found himself obliged to incur the danger of summoning an extraordinary session of congress, which according to his proclamation was convened on the first Monday of the following September. The choice of the speaker in the house of representatives showed that the democratic party had fallen from that great eminence of power which it had evinced in the presidential election, Mr. Polk, its candidate, being elected by a majority of 8 only. The special message was of course devoted to the topic of the day. It attributed the present condition of the country to over-trading, consequent upon excessive issues of bank paper and other facilities for the acquisition and enlargement of credit. A foreign debt of more than 30 millions; the investment of 39½ millions in unproductive lands; universal and extravagant speculation in real estate in cities and villages; public and private improvements, often ruinously improvident; the importation of grain to the value of more than two millions; and finally the rapid growth of luxurious habits among the people, were enumerated among the causes of the distress. This evil had been aggravated and the catastrophe accelerated by the effect of the law requiring banks to repay the government deposits in coin; and to prevent the future renewal of such inconvenience to the government, it was recommended that a new body of officials, not more than 10 in number, should be provided to take charge of the public money, and that the banks should no longer be employed as its depositories. The president also advised that a bankrupt law for banking and other corporations should be enacted; and that the approaching deficit in the treasury be made good by withholding from the states the 4th and last installment of a previous large surplus ordered to be deposited with them by act of June 23, 1836, and by the temporary issue of six millions of treasury notes. Of these measures, the most important, known as the independent treasury, was passed in the senate by 26 ayes to 20 nays, but was laid on the table in the other house by 120 ayes to 107 nays. The payment of the 4th installment to the states was, however, postponed, and the emission of 10 millions of treasury notes was authorized. The independent treasury, again recommended in the president's annual message in December, met the same fate in the next regular session, being again rejected by the house of representatives, after it had been passed by the senate. Another presidential measure was more fortunate, a so called preëmption law being enacted, giving settlers on public lands the right to buy them in preference to other persons.—An insurrectionary movement commenced in Canada in the latter part of 1837 having found aid and sympathy within our borders, Mr. Van Buren issued two proclamations, enjoining all citizens to refrain from violating the laws and the treaties of the country; and he also sent a military force to the frontier under Gen. Scott to preserve the peace there, discharging, according to Mr. Benton, "his high duties with equal firmness, skill, and success," though, as the same author adds, "with some personal detriment, losing much popular favor in the border states from his strenuous repression of aid to a neighboring people insurging for liberty and militarily crushed in the attempt."—The closing session of the 25th congress now witnessed the temporary stoppage in the house of representatives of the agitation of slavery. Mr. Slade of Vermont introduced the subject in a long and elaborate anti-slavery speech, whereupon the southern members withdrew for separate deliberation, and Mr. Rhett of South Carolina proposed to declare that it was expedient that the Union should be dissolved; but a less extreme course was adopted, and on the motion of Mr. Patten of Virginia it was determined by the house that for the future all petitions or other papers touching slavery should be laid on the table without being debated, printed, read, or referred. For this important resolution the friends of the president unanimously voted, as did many of his opponents.—In the summer of 1839 Mr. Van Buren made a visit to the state of New York, where he was received in all the important towns with the public honors due to the president; but this visit does not seem to have accomplished much toward restoring the lost predominance of the democratic party. His third annual message, in December following, was as usual largely occupied with financial discussions, and especially with the argument for the divorce of the government from the banks, and for the exclusive "receipt and payment of gold and silver in all public transactions;" that is to say, for the independent treasury. This measure, by which his administration is especially distinguished, being finally passed by both houses of congress, became a law on June 30, 1840.—The canvass preliminary to the presidential election of 1840 was begun uncommonly early and with unwonted energy by the opposition. Indeed, the public meetings held in the large cities during the spring and summer of 1839, where, under the lead of prominent whig statesmen, the policy of the president and his party was denounced as the source of the prevailing commercial troubles, were but the beginning of a vast movement to transfer the executive government into the hands of the whigs. The national convention of that party formally opened the contest on Dec. 4, 1839, by nominating for the presidency William Henry Harrison, and for the vice-presidency John Tyler. On the democratic side Mr. Van Buren had no competitor, and he was definitively made the candidate of his party by its national convention on May 5, 1840. Never in the political history of the United States was a canvass conducted amid such absorbing public excitement. The financial distress which had existed more or less oppressively since Mr. Van Buren's inauguration, was a standing text for the opposition journals and for the orators who assailed him at monster meetings in every part of the country. Every means of influencing public feeling was employed. Advertisements were published by responsible persons offering to pay "six dollars a barrel for flour if Harrison is elected, and three dollars if Van Buren is." Charges of extravagance, of corruption, of indifference to the welfare of the laboring classes, were freely brought against the democratic candidate; while the enthusiasm of the supporters of Harrison was inflamed by log cabins emblematic of his popular origin and habits, by songs, by processions, by assemblages counting tens and hundreds of thousands. The result was the discomfiture of the democrats in every state except Alabama, Arkansas, Illinois, Missouri, New Hampshire, Virginia, and South Carolina. Mr. Van Buren received only 60 electoral votes, while Gen. Harrison had 234; and yet so universal was the participation in the election, that the number of popular suffrages cast for the former was now 1,122,912, or more than 361,000 more than had sufficed to secure his return four years previously. But his last annual message, delivered within a month after this great defeat, bore no marks of any mental disturbance; with habitual elevation and calmness it considered its appropriate topics; set forth anew the benefits of the independent treasury system; announced, not without a natural movement of satisfaction, that the country was without either a national debt or a national bank; and concluded with advising the enactment of more stringent laws for the breaking up of the African slave trade.—From the white house Mr. Van Buren withdrew to his estate at Kinderhook, to appear a month afterward as an assistant at the funeral honors paid to Gen. Harrison by the city of New York. In 1844 his friends once more urged his nomination for the presidency by the democratic national convention at Baltimore; but he was rejected there on account of his opposition to the annexation of Texas to the Union, avowed in a public letter to a citizen of the state of Mississippi who had called for his opinion on that question. Though a majority of the delegates in the convention were pledged to support him, a rule fatal to this purpose was adopted making the votes of two thirds of the whole number necessary to the choice of a candidate. For several ballots he led all the competitors, when his name was withdrawn from the contest, and on the 9th ballot Mr. Polk was nominated. Mr. Van Buren and his friends in New York exerted all their influence in favor of the candidate, and by carrying that state for him achieved his election. Four years later, however, when the democrats had nominated Gen. Cass, and avowed their readiness to tolerate slavery in the new territories lately acquired from Mexico, Mr. Van Buren and his adherents exhibited no such acquiescence. Adopting the name of the free democracy, they at once began to discuss in public, with boldness, eloquence, and effect, that new aspect of the slavery question. They held a convention at Utica on June 22, which nominated Mr. Van Buren for the presidency and Henry Dodge of Wisconsin for the vice-presidency. Mr. Dodge declined the nomination, and at another convention in Buffalo on Aug. 9, Charles Francis Adams was substituted in his stead. The convention proclaimed at length their political doctrines, including the memorable declaration that "congress has no more power to make a slave than to make a king;" and that "it is the duty of the federal government to relieve itself from all responsibility for the existence or continuance of slavery wherever the government possesses constitutional authority to legislate on that subject, and is thus responsible for its existence." The policy of the country, said the convention, must be "not to extend, nationalize, or encourage, but to limit, localize, and discourage slavery;" we must have "no more slave states and no more slave territory." In accepting the nomination of this new party, Mr. Van Buren declared his full assent to its anti-slavery principles. The canvass before the people was conducted with enthusiasm and ability. The result was that in the state of New York Mr. Van Buren received the suffrages of more than half of those who had hitherto been attached to the democratic party; and that Gen. Taylor, the candidate of the whigs, was elected. After that time Mr. Van Buren remained in private life on his estate at Kinderhook, with the exception of a prolonged tour in Europe in 1853, '4, '5. In 1852 he gave his vote to Gen. Pierce, the presidential candidate of the democratic party, as he did in 1856 to Mr. Buchanan. In the election of 1860 he also voted for the candidates for presidential electors who had been agreed upon by the combined parties in opposition to Mr. Lincoln. On the outbreak of the civil war commenced by South Carolina, after the election of Mr. Lincoln, Mr. Van Buren declared himself decidedly and warmly in favor of maintaining the republic in its integrity.—While, from peculiar circumstances, the public career of this statesman has been the subject of much partisan denunciation, all parties have borne testimony to his admirable personal qualities. In the course of an excited debate in the senate Mr. Clay once said: "I have always found him in his manners and deportment civil, courteous, and gentlemanly; and he dispenses in the noble mansion which he now occupies, one worthy the residence of the chief magistrate of a great people, a generous and liberal hospitality. An acquaintance with him of more than 20 years has inspired me with respect for the man." A personal friend of Mr. Van Buren has described him as of about the middle size. "His hair and eyes are light, his features animated and expressive, especially the eye, which is indicative of quick apprehension and close observation; his forehead exhibits in its depth and expansion the marks of great intellectual power. The physiognomist would accord to him penetration, quickness of apprehension, and benevolence of disposition. The phrenologist would add unusual reflective faculties, firmness, and caution."—Mr. Van Buren was married in 1804, to Miss Hannah Hoes of Kinderhook, who died in 1818, leaving him four sons. Of these, the first, Abraham, born at Kinderhook, Nov. 27, 1807, was graduated at West Point in 1827, served as first aid to Gen. Macomb and as aid to Gen. Scott in the Florida war, and was brevetted as lieutenant-colonel for gallant conduct in the battles of Contreras and Churubusco, Aug. 20, 1847. John, born at Hudson, Feb. 18, 1810, was graduated at Yale college in 1828, studied law with Mr. B. F. Butler in Albany and the Hon. Aaron Vanderpoel in Kinderhook, was subsequently admitted to the bar, was attached to the legation while his father was minister to England in 1831-'2, was elected in Feb. 1845, by the legislature of New York, attorney-general of the state, and since the conclusion of his term of office on Jan. 1, 1847, has been a prominent member of the bar in the city of New York. In the presidential canvass of 1848 Mr. Van Buren greatly distinguished himself as a popular advocate of the free democratic party, and of the exclusion of slavery from the federal territories.

VANCOUVER, George, an English navigator and discoverer, born about 1758, died in May, 1798. He entered the navy in 1771, and served as midshipman in the 2d and 3d voyages of Capt. Cook (1772-'5, and 1776-'80). On Dec. 9, 1780, he was created a first lieutenant, and after several years' service in the West Indies returned to England in 1789. Some British subjects who had begun a settlement in Nootka having had a quarrel with the Spanish officers engaged in making the survey of the N. W. coast of America, in March, 1791, Vancouver, in command of the Discovery and the armed tender Chatham, was commissioned to go thither, and receive the surrender of Nootka from the Spaniards, in obedience to a letter which he bore from the court of Madrid to the Spanish commandant. He was also to make a survey of the coast northward from lat. 30° N., and to ascertain if there was any communication between the coasts and Canada by means of lakes, rivers, or inlets. He sailed from England April 1, 1791, and, after an examination of the Sandwich islands, crossed in March, 1792, to the American coast, where the negotiations for the surrender of Nootka were easily finished, and the region delivered up by Quadra, the Spanish commander; and he spent the summers of 1792, '3, and '4 in surveying the coast as far N. as Cook's inlet, wintering in the Sandwich islands. To the island of Vancouver he gave the name of Quadra and Vancouver's island, but the first part of the name has been dropped.

On his return he surveyed most of the W. coast of South America from the island of Chiloe, visiting the chief Spanish settlements, and reached England in Oct. 1795. His arduous labors undermined his constitution; and he spent the remainder of his life in preparing an account of his expedition, which at the time of his death he had nearly finished. It was published (3 vols. 4to., London, 1798) with the atlas of the N. W. coast surveys.

VANCOUVER'S ISLAND, or QUADRA AND VANCOUVER'S ISLAND, an island belonging to Great Britain, off the N. W. coast of North America, between lat. 48° 20′ and 51° N., and long. 123° and 128° W.; length from N. W. to S. E. 300 m.; greatest breadth 75 m.; area, 14,000 sq. m.; native pop. 11,463. It lies S. W. of British Columbia, from which it is separated by Queen Charlotte's sound and the gulf of Georgia. The strait of Juan de Fuca and Puget's sound lie between it and Washington territory. The S. W. coast, washed by the Pacific ocean, is indented with several bays and sounds, the largest of which are Nootka and Nittinat sounds and Clyoquot bay. It is inhabited mainly by 10 or 12 Indian tribes, of which the Nootka, Quaquidto, and Kawitchin are the principal. The town of Victoria, on the site of the Hudson's bay company's fort Victoria, on Royal bay near the S. E. extremity of the island, is the residence of the British governor, and a place of growing importance. The climate is milder than that of the mainland, the mean temperature of winter being 32° and of summer 63°. Frosts are of short duration and not severe; but there are long and violent storms and heavy falls of rain during the winter. In the summer dense and long continued fogs temper the heat, which would otherwise be excessive. The soil is rich and well adapted to cereals. Coal is found in the northern part, of good quality and very near the surface.—The possession of Vancouver's island was secured to Great Britain by the Oregon treaty (1846), and it was consigned by charter to the Hudson's bay company, the British government reserving the right of repurchasing it on the expiration of the company's charter in 1859. It has become a possession of considerable importance since the discovery of gold in the neighboring colony of British Columbia.

VANDALS, an ancient confederacy of barbarous nations of Germanic, and specifically of Suevic race, though some writers are inclined to identify their nationality with that of the Slavic Wends, Vends, or Vindes. They first appear on the northern coasts of Germany, whence they migrated in a S. E. direction, settling for a time in the Riesengebirge, which from them received the name of Vandal mountains, and subsequently in Pannonia and Dacia. At the beginning of the 5th century they turned W., swept across Germany, traversed the Rhine, the Rhône, and the Pyrénées, and conquered the Alani in Spain, founding a powerful kingdom, to which the modern Andalusia owes its name. Finally, under their ablest monarch, Genseric, they crossed over into Africa with a formidable fleet (A. D. 429), and on the ruins of the Roman dominions in that country established a Vandal empire, which became the terror of all the surrounding countries. In 455 they sacked Rome. (See GENSERIC.) Having adopted the Arian creed, they persecuted the orthodox Christians. For more than a century they maintained their power in Africa, until it was overthrown and utterly destroyed by the fleet and army of the emperor Justinian under Belisarius, who after a series of victories succeeded in making their last and gallant king Gelimer his captive (A. D. 535).

VANDAMME, DOMINIQUE JOSEPH, a French general, born in Cassel, department of Nord, Nov. 5, 1771, died there, July 15, 1830. He entered a colonial regiment while very young, returned to France at the outbreak of the revolution, raised a free company, and at the age of 22 was a brigadier-general in the army of the north. He made the campaign of 1795 under Jourdan, was transferred the next year to the army of the Rhine, became general of division in 1799, and served with distinction during all the wars of the empire up to the Russian expedition, in which, having fallen into disgrace on account of a quarrel with Jerome Bonaparte, king of Westphalia, he had no share. In the summer of 1813 his corps formed the southern angle of Napoleon's masterly defended position in Saxony; but advancing too far from its centre, Dresden, a few days after the emperor's victory at that place, he was surrounded at Kulm by Prussian, Austrian, and Russian divisions under Kleist of Nollendorf, Ostermann, and others, and after a bloody fight was compelled to surrender with more than 10,000 troops. He was for some time confined at Viatka, Russia, and returned to France in 1814, but was ordered to quit Paris within 24 hours and retire to Cassel. On the first news of Napoleon's return from Elba he offered his services to Louis XVIII., but they were refused. He then went over to the emperor, who made him a peer of France and commandant of the 2d division. He obtained a signal success at Wavres after the battle of Ligny, and was in pursuit of the enemy when he heard of the emperor's defeat at Waterloo. Obliged to quit France by the ordinance of Jan. 1816, he withdrew to the United States, but returned in 1824 to Cassel.

VANDERBERG, a S. W. co. of Indiana, bounded S. by the Ohio river; area, 216 sq. m.; pop. in 1860, 20,554. The surface is generally undulating and the soil very fertile. The productions in 1850 were 408,075 bushels of Indian corn, 19,079 of wheat, 36,719 of oats, and 2,337 tons of hay. There were 20 churches, 6 newspaper offices, and 1,280 pupils attending public schools. Bituminous coal is found in abundance. The county is intersected by the Wabash and Erie canal and the Evansville and Illinois railroad. Capital, Evansville.

VAN DER HEYDEN, JAN, a Dutch painter,

born in Gorkum in 1637, died in 1712. As a painter of old buildings, churches, palaces, &c., he held a unique position among artists of the time. His pictures are admirable for finish and tone, having, according to Sir Joshua Reynolds, "the effect of nature seen in a camera obscura," and were frequently embellished with figures by Adrian Vandervelde and Lingelbach. He published in 1690 a work on fire engines, and in the latter part of his life held the position of director of the fire engines of Amsterdam.

VANDERLYN, John, an American painter, born in Kingston, Ulster co., N. Y., in 1776, died there, Sept. 23, 1852. Removing to New York at the age of 16, he received instructions in painting from Gilbert Stuart, and in 1796 was enabled through the assistance of Aaron Burr to visit Paris for the purpose of instruction. He returned to America after an absence of 5 years, but in 1803 revisited Europe, where he remained until 1815. During this period he executed many excellent copies from the old masters, and some original works of great merit, including the "Murder of Jane McCrea by the Indians;" "Ariadne," a picture very celebrated in its time, and which was the first successful representation of a mythological subject by an American painter; and "Marius Sitting among the Ruins of Carthage," which received the gold medal at the Paris exhibition of 1808, and was favorably noticed by the emperor Napoleon. After his second return to America, Vanderlyn painted portraits of Madison, Monroe, Clinton, Calhoun, and many other distinguished men, but relinquished the legitimate practice of his art to superintend the exhibition of panoramic views in a building called the rotunda, erected by him in the city hall park of New York. The enterprise proved unsuccessful in a pecuniary point of view, and the artist never afterward painted with his early vigor. Among his remaining pictures are a portrait of Washington for the hall of representatives at Washington, and the "Landing of Columbus," painted for one of the compartments of the rotunda in the national capitol. His last work was a portrait of President Taylor, exhibited in 1851.

VAN DER MEER, Jan, the elder, a Dutch painter, born probably in Haarlem in 1627, died there in 1691. He was educated in Italy, but passed the greater part of his life in his native city, where he was greatly esteemed as a painter of landscapes, sea pieces, and battles. He designed with grace, and was distinguished by a sunny brilliancy of coloring not unlike that of Claude Lorraine.—Jan, the younger, son of the preceding, born in Haarlem in 1655, died in 1688. He was the scholar of Nikolaas Berghem, and became a successful follower of the style of that master. His works are highly finished, and the figures, whether of men or animals, are painted with great spirit and fidelity. They are seldom to be met with out of Holland, and command very high prices. He executed a few good etchings.

VAN DER MEULEN. See Meulen.

VANDERVELDE. I. Adrian, a Dutch painter, born in Amsterdam in 1639, died there in 1672. He excelled in figures, whether of men or animals, and was frequently employed by Ruysdael, Hobbima, Van der Heyden, and others of his contemporaries, to embellish their pictures with accessories of this character. His landscapes are faithful transcripts of natural scenes, and bring very high prices. He executed a few historical pieces of merit. II. Willem, the elder, a Dutch painter, born in Leyden in 1610, died in London in 1693. In early life he followed the sea, whence he acquired that technical acquaintance with shipping and knowledge of marine phenomena which made him one of the most accomplished artists of his time in this branch of the art. It is not known where he received his instructions in painting, but before the period of middle life he had become so distinguished by his drawings of sea fights, that the states of Holland provided him with a small vessel for the purpose of following the Dutch fleets, and illustrating their manœuvres. He was accordingly present at the celebrated encounters between the English and Dutch in 1665 and 1666. In 1675 he was invited by Charles II. to England, and received the appointment of painter of sea fights to the king, with a pension of £100, which was continued by James II. In this capacity he was present at several sea fights. His designs were generally executed with a pen upon prepared paper or whitened canvas, and many were colored in oils by his son. III. Willem, the younger, son of the preceding, born in Amsterdam in 1633, died in London, April 6, 1707. He inherited his father's taste for marine paintings, and executed an infinite variety of sea pieces, calms, and storms. Of his storm pieces, which were unrivalled until the appearance of Turner, the Bridgewater collection contains a well known specimen, "The Rising of the Gale," in competition with which Turner painted his "Gale at Sea" in the same gallery. Vandervelde's pictures are owned chiefly in England, where he passed the greater part of his life, and bring large prices.

VAN DER WERF, Adrian, a Dutch painter, born in Kralinger Ambacht, near Rotterdam, in 1659, died in 1722. At the age of 17 he established himself at Rotterdam as a painter of portraits and history, and almost immediately rose into great reputation. In 1696 he entered the service of the elector palatine, in which he continued until the death of the latter in 1716, devoting 9 months in the year to his patron, and receiving high prices for the pictures painted during the remaining 3 months. The greater part of the pictures painted by him for the elector, and which formed part of the collection at Düsseldorf, are now in the Pinakothek at Munich.

VAN DER WEYDE, Roger, a Flemish painter, born in Brussels in the latter part of the 15th century, died in 1529. He was very celebrated in his time, having been one of the first to introduce a more graceful style of designing than prevailed in the Flemish provinces, but no picture that can be certainly attributed to him is now extant. Roger Van der Weyde is often confounded with Roger of Bruges, who flourished about half a century earlier.

VAN DIEMEN'S LAND. See TASMANIA.

VANDYKE, or VAN DYCK, SIR ANTONY, a Flemish painter, born in Antwerp, March 22, 1599, died in London, Dec. 9, 1641. His parents, who were persons in comfortable circumstances, with some knowledge of art, gave him his first instructions, and at 16 years of age he was placed under Rubens, with whom he made such rapid progress as, according to the common account, to excite the jealousy of his master. The often repeated story that Vandyke first revealed his talent to the latter by the manner in which he repainted a portion of Rubens's "Descent from the Cross," which, while still wet, had been accidentally damaged by a fellow pupil, has no foundation in fact, as the picture was painted and put up in the cathedral at Antwerp several years before Vandyke entered the studio of Rubens. There is probably no reason to suppose that the relations between master and pupil were otherwise than friendly; and when Vandyke went to Italy in 1619, by the advice of Rubens, they parted with expressions of mutual esteem. Influenced by his training in the school of Rubens, he repaired first to Venice, whence, after a careful study of the great colorists, he went to Genoa and Rome. In both cities he received abundant commissions for portraits, and in the latter produced a fine head of Cardinal Bentivoglio, esteemed one of his masterpieces, beside many altar pieces. In 1626 he returned to Antwerp with a high reputation, and soon after executed for the church of the Augustines there a celebrated picture representing St. Augustine in ecstasy supported by angels. For the next 5 years he was busily employed by ecclesiastical establishments and private patrons in the Netherlands; and to this period may be ascribed numerous "Crucifixions" and "Pietas," impressed with that character of profound sorrow for which the artist has always been distinguished. Preëminent among them is the "Christ Crucified between the Two Thieves," in the church of the Recollects at Mechlin, which Reynolds pronounced not only the best of Vandyke's historical works, but "one of the finest pictures in the world." The close imitation of Rubens which at first characterized his works was now, under the influence of his studies in Italy, replaced by a peculiar style in which gracefulness of contour, softness of coloring, and an expression of a deeper and more touching emotion are the distinguishing traits. "In the hands of Vandyke," says Kugler, "this rather sentimental manner has been brought to the highest perfection, and imbued with the deepest pathos; but he does not always observe the proper limits, and sometimes borders upon the artificial and theatrical." Accordingly in portraits he won his greatest reputation, and it was in consequence of his skill in this department of the art that Charles I. invited him in 1632 to England. Within a year or two after his arrival he was knighted and appointed painter to his majesty, with a pension of £200 for life. "He always," says a contemporary writer, "went magnificently dressed, had a numerous and gallant equipage, and kept so good a table in his apartment, that few princes were more visited or better served." Excessive application (it is said that he frequently painted a portrait in a day) and a too lavish indulgence in dissipation, together with the anxieties caused by a search for the philosopher's stone, to which in his latter years he surrendered much of his time, rapidly undermined his health; and with the desire of repairing his shattered fortunes, as also of doing something in England worthy of his fame, he proposed to the king to paint the walls of the banqueting room at Whitehall. The price demanded was beyond the capacity of the royal treasury; and while negotiations were in progress for the execution of the work at a less sum, the death of the painter took place. The number of works of all classes attributed to him is enormous, in view of his short life, and of the circumstances under which the last 10 years of it were passed. The best of his portraits are in England, prominent specimens being his several portraits of Charles I., those of the earls of Strafford and Pembroke, and many others in the collections at Windsor Castle, Hampton Court, Blenheim, Althorp, and other famous seats. There are also many in the galleries of Paris, Berlin, and Vienna. A series of 100 small portraits in chiaroscuro of the most eminent of his contemporaries, from which etchings have been made, was executed by him in Antwerp, and is very celebrated. As a portrait painter he ranks next to Titian, and by some is accounted equal to that master.

VANE, CHARLES WILLIAM STEWART. See LONDONDERRY, MARQUIS OF.

VANE, SIR HENRY, an English statesman, governor of the colony of Massachusetts, born in 1612, executed on Tower Hill, London, June 14, 1662. He was the son of Sir Henry Vane the elder, who filled some of the highest state offices during the reigns of James I. and Charles I. He was educated at Westminster school, and in his early youth was, according to his own account, much addicted to pleasure; but from his 15th year his views assumed a strongly religious cast. At the age of 16 he was entered at Magdalen college, Oxford, but before the time of matriculation arrived he had become so far alienated from the church of England that he refused to take the oath of allegiance, visited Holland and France, and passed some time at Geneva. His conduct was highly displeasing to his father, who was at that time comptroller of the household and member of the privy council. Bishop Laud was desired to expostulate with young Vane, but his interference only confirmed him in his course. Disturbed by the displeasure of his father, he formed the resolution of joining the infant colony of Puritans in Massachusetts. Reaching Boston in 1635, he was everywhere welcomed with enthusiasm, and in 1636 was elected governor. The choice was unfortunate, more especially as a bitter religious controversy sprang up during his term of office. Vane, who was one of the few men of the time who really understood and believed in the principles of civil and religious liberty, and had a horror of all forms of bigotry, had no sympathy with the attacks of the clergy on Mrs. Hutchinson, with many of whose opinions he entirely agreed. A strong opposition under the lead of Winthrop was organized against him, and on the day of the annual election in 1637 he was defeated. But he had gained the affections of the people of Boston, and was instantly chosen by them one of their representatives to the general court. The majority of that body declared the election of Vane and his associates void, whereupon the inhabitants of Boston returned them a second time on the next day. In order to put down the Hutchinsonian heresy, a law was passed by the general court that no strangers should be received within the jurisdiction of the colony except such as should be allowed by some of the magistrates. This created such public discontent that Governor Winthrop felt obliged to put forward a "Defence," to which Vane immediately replied in a pamphlet entitled "A Brief Answer to a certain Declaration, made of the Intent and Equity of the Order of Court, that none should be received to inhabit within this jurisdiction but such as should be allowed by some of the magistrates." In Aug. 1637, Vane returned to England. There, in consequence of his peculiar opinions, he found himself in an embarrassing situation, and for some time did not take part in active life. In 1640 he was elected a member of parliament from Kingston-upon-Hull, and received in conjunction with Sir William Russell the office of treasurer of the navy. In June of this year he was also knighted. After the dissolution of parliament he was immediately reëlected from the same place to the long parliament. Before this assembly met, Vane, in looking over the papers of his father's cabinet, found in them some notes which made so strong an impression on him that they were communicated by him to Pym, and were the chief evidence upon which the latter relied in moving his impeachment of the earl of Strafford. The disclosure of this fact brought on a collision between the father and son, and it was some years before a reconciliation was effected. The younger Vane was a zealous opponent of the royalist party, and after war had broken out between the king and parliament, he gave up to the latter the fees of his office of treasurer of the navy, which amounted to £30,000 a year, as he deemed such a revenue too great for a subject. In June, 1643, he was sent to Scotland as one of the commissioners to negotiate an alliance, and by his persuasion the "Solemn League and Covenant" was adopted. "There need no more be said of his ability," says the royalist historian, Clarendon, "than that he was chosen to cozen and deceive a whole nation, which excelled in craft and cunning, which he did with notable pregnancy and dexterity." During the progress of the war Vane was placed on all commissions empowered to treat with the king, and was also one of the parliament's committee which occasionally accompanied the army. When in 1648 the house of commons discussed the terms of settlement offered by the king, he led the minority which favored their rejection. But he bowed to the will of the majority, and not approving of the "purge" of the parliament which Cromwell effected, he retired to private life. He had no further share in the political movements of the times, until, in Feb. 1649, he was persuaded to become a member of the council of state, which was intrusted with the executive government of the nation. In this position he had almost the exclusive direction of the navy and the conduct of foreign wars. He was also at the head of a committee which reported a bill for parliamentary reform, and it was at this period that Milton wrote in his praise one of the finest of his sonnets. The forcible dissolution of the long parliament by Cromwell in April, 1653, brought him into open conflict with that leader. As the troops entered the house, Vane cried out: "This is not honest! yea, it is against morality and common honesty." Cromwell immediately turned upon him, crying out in a loud voice: "Sir Harry Vane! Sir Harry Vane! the Lord deliver me from Sir Harry Vane!" He now retired to his estate at Raby Castle, and employed himself in writing a theological work, of which the following is part of the title: "The Retired Man's Meditations, or the Mystery and Power of Godliness shining forth in the Living Word, to the Unmasking the Mystery of Iniquity in the most refined and purest Forms." He also published a political work in the form of a letter to one of the protector's council, and on the occasion of the fast declared by Cromwell in March, 1656, wrote a tract entitled "A Healing Question propounded and resolved." This was adjudged seditious, and for it and his opposition to the course taken by the protector he was conveyed on Sept. 9 to Carisbrooke castle in the Isle of Wight; but as it was found that his resolution could not be shaken, he was speedily released from confinement. While in prison he published a political letter to Harrington, and a theological work entitled "Of the Love of God, and Union with God." Subsequently other means were employed to induce him to support the protector, but he was neither to be won nor intimidated. From first to last he remained an inflexible republican. After the death of Cromwell he was elected to the parliament of 1659, and was there the leader of the republican party. When the long parliament was again summoned to assemble, Vane was appointed one of the committee of safety, and subsequently president of the council of state. The restoration of the king led to his disgrace and death. He had been placed in confinement at his own castle, and after the arrival of Charles was committed to the tower. He was one of the 20 excepted out of the act of general pardon and oblivion, and after an insurrection of the fifth monarchy men he was removed from one prison to another, and at last confined in a castle on one of the Scilly isles. Here he remained immured for two years, spending his time in the composition of works principally on theology, though some are of a political character. Meanwhile his fate was in suspense. In Aug. 1660, the lords and commons had unitedly petitioned that "if he were attainted, yet execution as to his life might be remitted." But the latter body, in July, 1661, ordered him to be proceeded against according to law. He was consequently removed to the tower of London, and on June 2, 1662, arraigned before the court of king's bench. On the trial he behaved with singular intrepidity, and it was found necessary for the judges to strain the law in order to convict him. He was brought in guilty, but according to the promise made by the king the sentence was to be remitted. The courageous bearing of the prisoner, however, had alarmed Charles. After the trial he wrote a letter to the chancellor, stating that if Vane had given new occasion to be hanged, he was certainly too dangerous a man to let live, if he could be honestly put out of the way. The sentence was not remitted, and Vane suffered the following week; but his punishment was changed, and instead of being hanged, he was permitted to be beheaded. His bearing at the place of execution was dignified and manly; and in order to prevent the condemned man from exciting sympathy, trumpeters were employed to drown his dying speech. He was a leader of the Independents, and was one of the lay members nominated by parliament to take part in the proceedings and discussions of the assembly of divines. His labors in behalf of New England were arduous and important. It was in great measure through his influence that the charter for the Rhode Island colony was procured, and Roger Williams declared that his name ought ever to be held in honored remembrance by her people. Vane's only son was knighted by Charles II.—His life has been written by C. W. Upham, in Sparks's "American Biography."

VAN EFFEN, Justus. See Effen.

VAN ERPEN, Thomas. See Erpenius.

VAN EYCK. See Eyck.

VAN HELMONT. See Helmont.

VANILLA, a genus of endogenous plants of the natural order of *orchidaceæ*, so called from Span. *vainilla*, a little knife sheath, the fruit presenting that appearance. The species are found in tropical South America, the West Indies, and Java, and are climbing plants with square stems extending themselves 20 or 30 feet in length, fixing themselves to the bark of trees, from which they partially derive nourishment by numerous rootlets. The leaves are fleshy, subcordate at base, and articulated with the stem; the perianth of the flower is composed of 6 parts, articulated with the ovary; the sepals and petals nearly equal, conformed and free at base; the labellum entire; the anthers terminal and opercular; pollen masses 2, bilobed and granulose; the fruit a fleshy silique-like pod, dehiscing at the sides, and containing numerous globose seeds covered with a closely attached testa. The fragrant vanilla (*V. planifolia*, Andrews) has oblong, lanceolate, flat leaves, oblong, obtuse, flat sepals and petals, the labellum crisp, convex, the fruit fragrant. It is a native of Mexico, Guatemala, and the West Indies. The aromatic vanilla (*V. aromatica*, Plumier) has ovate oblong, acuminate, sessile leaves; campanulate perianth with 5 undulated acuminate laciniæ; the labellum acuminate, hood-shaped at base, with an elevated middle line; it is a native of Brazil. The large-flowered vanilla (*V. grandiflora*) has elongated, straight, smooth, oblong petals and sepals; it is a native of French Guiana. These species are the principal ones which produce the vanilla of commerce. The article was not known in Europe until after the discovery of America, when the Spaniards employed it to flavor chocolate after the manner of the Indians. The plant which produced it was not known botanically until 1703, when it was described by Plumier; at the present time 4 sorts are commercially known, varying in price according to their qualities. The fruit is the only part used. Gathered when it is yellow, it is allowed to ferment for 2 or 3 days, then dried in the sun; when half dried, it is rubbed with oil of cocoa or of the *ricinus*, exposed again in the sun, oiled a second time, and collected into little bundles and wrapped in the leaves of the Indian reed to be ready for sale. Vanilla has aromatic and stimulant qualities, and contains much essential oil and benzoic acid. Beside its employment for flavoring and its use in confectionery, it is medically exhibited in the treatment of hysteria, rheumatism, and asthenic fevers; and a scentless-fruited species (*V. claviculata*) is employed by the negroes of the Antilles and Jamaica in treatment of syphilis and as a vulnerary.

VANINI, Lucilio, an Italian philosopher, born at Taurisano in 1585, burned at the stake in Toulouse, Feb. 19, 1619. After studying at Rome and Padua, he entered holy orders, travelled in Germany and Holland, taught at Geneva, Paris, and Lyons, was obliged to flee to England, where he argued in favor of Roman Catholicism, and was imprisoned 49 days, and returned to Genoa, and thence to Lyons, where in 1615 he published his *Amphitheatrum Æternæ Providentiæ Divino-Magicum, Christiano-Physicum, necnon Astrologo-Catholicum*, a curious argument against various forms of atheism, which however caused him to be suspected of a desire to spread atheistic doctrines. While professing orthodoxy, he showed in the work his familiarity with ancient philosophy, his taste for the astrological and magical speculations of Cardan and Pomponazzi, and his preference for Aristotle as interpreted by Averroes to the scholastic Aristotelianism. He went to Paris, where in 1616 he published a volume of dialogues entitled *De Admirandis Naturæ, Reginæ Deæque Mortalium, Arcanis.* This work, which appeared with the sanction and was afterward burned by the order of the Sorbonne, is sceptical and satirical in tone, and of a pantheistic character. He soon after removed to Toulouse, where his vivacity, amiability, erudition, and eloquence attracted numerous pupils and gave him great success. The president of the parliament received him into his house, and intrusted to him the education of his children. But, accused by public rumor of atheism, he was arraigned for this crime before the parliament, and although strenuously denying the charge, after a trial of 6 months, he was condemned to have his tongue cut out and to be burned alive.—See Fuhrmann, *Leben und Schicksale, Geist, Charakter und Meinungen des L. Vanini* (Leipsic, 1800), and Rousselot, *Œuvres philosophiques de Vanini* (Paris, 1841).

VAN LENNEP. See LENNEP.

VANLOO, JEAN BAPTISTE, a French painter, born in Aix, Provence, in 1684, died there in 1746. His great-grandfather, grandfather (a native of Sluis, Zealand), and father were painters. When about the age of 30 he established himself in Turin, and was taken into the service of the prince of Carignano, son-in-law of the duke of Savoy, whom in 1719 he accompanied to Paris. He here rose into great repute as a portrait painter, and was in 1735 elected professor in the academy. He was also distinguished for his historical pictures. In 1738 he visited London, and soon, according to Walpole, "bore away the chief business from every other painter." He painted with extraordinary facility, but in the maturity of his powers and fame executed little of his portrait pieces beside the heads, leaving the bodies and draperies to be finished by his assistants. The best of his historical pictures, as "Christ entering Jerusalem," "St. Peter delivered from Prison," &c., are in Paris.—CHARLES ANDRÉ, better known as Carle Vanloo, brother of the preceding, born in Nice in 1705, died in Paris in 1765. He accompanied his brother to Paris in 1719, and subsequently became one of the most distinguished pupils of the academy. In 1727–'34 he was absent in Italy, but the remainder of his life was passed in Paris, where he enjoyed a great reputation as a painter of history and portraits. In 1761 he was appointed director of the academy, and in 1762 painter to the king. He is considered by some the last of the old school of French painters. His son César succeeded him as director of the academy; and of his two nephews, Louis Michel and Charles Amédée Philippe, the former became first painter to the king of Spain, and the latter to the king of Prussia.

VANMANDER, CAREL, a Flemish painter and author, born in Meulebeke, near Courtray, in 1548, died in Amsterdam in 1606. After several years' study in Rome, he settled about 1578 in his native place, but was compelled by the breaking out of the religious wars of the Netherlands to take refuge in Bruges, whence in 1583 he removed to Haarlem, where he remained upward of 20 years. He established there a flourishing academy of painting, and occupied himself also with literary labors, prominent among which were translations from Homer, Virgil, and Ovid, and the preparation of *Het Schilder Boek* ("The Book of Painters," 1604), which is a standard authority with reference to the Dutch and Flemish schools. A modernized edition of this branch of the work, with additions, was published in Amsterdam in 1764. He painted both history and landscape, but was most esteemed in the latter department, and throughout his life produced many lyrics, songs, and dramatic pieces.

VAN NESS, CORNELIUS P., LL.D., an American jurist and diplomatist, born in Vermont in 1781, died in Philadelphia, Dec. 15, 1852. He was educated for the law, and practised his profession with great success for some years at Burlington, Vt. At the close of the war of 1812–'15 he was appointed collector of the port of Burlington, and in 1818 was elected chief justice of the supreme court of the state. In 1822 he was chosen governor of Vermont, and reëlected in 1823 and 1824, the last time almost unanimously. In 1823 the university of Vermont conferred on him the honorary degree of LL.D. In 1829 President Jackson appointed him minister to Spain, which office he filled till 1838; and on his return he was appointed collector of the port of New York. After 1841 he lived in retirement.

VANNI, FRANCESCO, an Italian painter, born in Sienna in 1565, died there in 1610. At Rome he acquired the style of Federigo Baroccio, which he imitated so closely that it is frequently difficult to distinguish the works of the two masters. He brought himself into general notice by a picture of St. Peter rebuking Simon Magus, for which he was knighted by Pope Clement VIII.; and thenceforth he lived in great repute at Sienna, where his best works are still to be found.

VAN OORT, ADAM. See OORT.

VAN OOST, JACOB, the elder, a Flemish painter, born in Bruges about 1600, died there in 1671. He studied his art in Italy, where he became an imitator of Annibale Carracci. He was a facile worker and a good colorist, and executed for the churches of Bruges, where he passed the greater part of his life, an immense number of pictures, prominent among which is his "Descent from the Cross" in the church of the Jesuits, considered his masterpiece.—Jacob, the younger, son of the preceding, born in Bruges in 1637, died in 1713. He was educated in Italy, and subsequently settled in Lisle, where he rose to great reputation as a historical painter. He was also distinguished for his portraits, which in the estimation of some rank with those of Vandyke.

VAN OS, Pieter Gerard, a Dutch painter, born at the Hague in 1776, died there in 1839. He formed his style on the works of Paul Potter and Dujardin, and became eminent for his landscapes, with cattle, &c., which are highly prized in collections in his native country. Having served in 1813–'14 as a captain of volunteers, he attempted with success military subjects and battle pieces. He also executed excellent etchings from his own designs.

VAN RENSSELAER. I. Stephen, LL.D., known as "the patroon," an American statesman and patron of learning, born in New York, Nov. 1, 1764, died in Albany, Jan. 26, 1839. He was the 5th in lineal descent from Kiliaen Van Rensselaer, the original patroon or proprietor of the "colonie of Rensselaerswyck," who in 1630 and subsequently purchased land, which in 1637 formed a tract 24 miles in breadth by 48 in length, extending from the immediate vicinity of Fort Orange (now Albany) over the greater part of Albany, Rensselaer, and Columbia counties. The mother of Stephen Van Rensselaer was Catharine, daughter of Philip Livingston, the proprietor of the Livingston manor, under whose care he was placed by his mother after the death of his father. He entered Princeton college in 1771, but owing to the proximity of the British army was removed to Harvard college, where he was graduated in 1782. He married the next year a daughter of Gen. Philip Schuyler. In 1789 he was elected to the house of assembly of the state, and the next year to the senate, to which he was reelected annually till 1795, when he was chosen lieutenant-governor, which office he filled for 6 years. He was a member of the constitutional convention of 1801, and most of the time its presiding officer; and in 1810–'11 he was one of the commissioners for exploring the route and considering the feasibility of a western canal. He was made commander of the cavalry of the state with the rank of general in 1801, and in 1812, soon after the commencement of the war, was called by Gov. Tompkins to the command of the New York militia. He served two months, assaulting and taking Queenstown, Canada, but was eventually defeated in consequence of the refusal of the militia under his command to go out of the state, from alleged constitutional scruples. Disgusted with their conduct, he resigned. In 1813, as once before, he was a candidate for governor, being both times defeated by an inconsiderable majority. After the war he devoted his energies, in connection with De Witt Clinton, to the prosecution of the Erie canal, and was from 1816 till his death one of the board of canal commissioners, and for 15 years its president. He was again a member of the legislature in 1816; in 1819 was elected a regent of the state university, and subsequently its chancellor; in 1820 president of the agricultural board of the state; and in 1821 a member of the constitutional convention. In 1821–'2, Professor Amos Eaton, under his direction and at his expense, made a geological survey of Albany and Rensselaer counties, including an analysis of their soils; and in 1823 a similar survey across the state, along the line of the Erie canal, while Professor Hitchcock was employed to make another across New England. These surveys he published in 1824 at his own cost. He next employed Professor Eaton to deliver familiar lectures on natural science through the state. In Nov. 1824, he provided suitable buildings at Troy, and established a scientific school for the instruction of teachers, with two professors, employed at liberal salaries. This school was incorporated in 1826 as the Rensselaer institute. Fully one half of the current expenses were borne by Gen. Van Rensselaer, and in 1828 he made the offer to the clerk of each county in the state to nominate one pupil to enjoy a 3 years' course of gratuitous instruction at the institute, the only condition being that they should teach for one year after graduation. He continued to aid in supporting the institute till his death. In 1823 he was elected to congress, and subsequently reëlected for 3 successive terms. His vote determined that of the delegation from New York in favor of Mr. Adams, and caused his election. In 1825 Yale college conferred on him the degree of LL.D.—See "A Discourse of the Life, Services, and Character of Stephen Van Rensselaer, with an Historical Sketch of the Colony and Manor of Rensselaerwyck," by Daniel D. Barnard (8vo., Albany, 1839). II. Solomon, a relative of the preceding, born in Albany in 1764, died there, April 23, 1852. He entered the U. S. army in 1792, and in 1794, as captain, took part in the battle of Miami, where he was severely wounded. In 1800 he left the service, but was adjutant-general of the New York militia for several years subsequently. In 1812 he was lieutenant-colonel of volunteers, and took part in the assault on Queenstown heights, where he was again seriously wounded. In 1819 he was elected a member of congress, and served till 1822. In 1836 he published a "Narrative of the Affair at Queenstown." III. Cortland, D.D., a son of Stephen, born in Albany, May 25, 1808, died in Burlington, N. J., July 27, 1860. He was graduated at Yale college in 1827, and was admitted to the bar of his native state in 1830; but he soon afterward entered the theological seminary at Princeton, was ordained in 1835, and commenced preaching in Virginia. In 1837 he was installed pastor of the 1st Presbyterian church in Burlington, N. J., and the same year appointed corresponding secretary of the board of education of the general assembly of the Presbyterian church, both of which offices he filled till his death. As secretary of the board of education he was very laborious and energetic, and brought it to a high degree of efficiency. He published several essays, sermons, and addresses, mostly on ministerial education; and since his death a volume of his "Essays and Discourses, Historical and Practical," has appeared (12mo., Philadelphia, 1861).

VAN SANTVOORD, George, an American lawyer and author, born in Belleville, N. J., Dec. 8, 1819. He was graduated at Union college in 1841, studied law at Kinderhook, N. Y., for 3 years, removed to the state of Indiana, and returning thence practised his profession at Kinderhook from 1846 to 1852. He has since resided at Troy, N. Y. In 1852 and 1856 he was elected to the assembly of New York, and in 1859 was elected district attorney of Rensselaer co. He has published, beside contributions to periodical literature, a "Life of Algernon Sidney" (12mo., New York, 1851); "Lives of the Chief Justices of the United States" (8vo., New York, 1854); "Principles of Pleading in Civil Actions under the New York Code" (8vo., Albany, 1852; enlarged ed., 1855); "Precedents of Pleading" (1858); and "Practice in the Supreme Court of the State of New York in Equity Actions" (1860).

VAN SCHENDEL, Petrus, a Belgian painter, born in Breda in 1806. He studied at the academy of Antwerp under Van Brée, and subsequently established himself at Brussels, where he is well known as a painter of history, *genre*, and portraits. Among his best works are market scenes and interiors, in which the effects of moonlight and fire light or lamp light are contrasted with great skill. He exhibits annually at Brussels and Paris, and has received prizes in both cities. Several of his pictures have also been exhibited in New York.

VANSITTART, Nicholas. See Bexley.

VANSOMER, Paul, a Flemish painter, born in Antwerp about 1576, died in London, Jan. 6, 1621. He visited England in the early part of the 17th century, and rose to great celebrity as a portrait painter, being one of the most eminent masters in that department previous to the arrival of Vandyke.

VAN SPAENDONCK, Gerard, a Flemish painter of flowers, born at Tilburg in 1752, died in Paris, Aug. 11, 1822. He was a pupil of Herreyns, a flower painter of Antwerp. He became a member of the academy of painting in Paris in 1781, and in 1793 professor of vegetable iconography at the *jardin des plantes*. He was the author of an admired work in folio entitled *Fleurs dessinées d'après nature.*

VAN SWIETEN. See Swieten.

VANUCCI. See Perugino.

VAN UTRECHT, Adrian, a Flemish painter, born in Antwerp in 1599, died there in 1651. Pe was one of the greatest masters of still life of his time. His works, of which many of the best were painted for Philip IV. of Spain, now command high prices.

VAN VEEN, or Venius, Otho, a Flemish painter, born in Leyden in 1556, died in Brussels in 1634. He received his art education in Italy, and, after executing a number of works for the emperor at Vienna and for the elector of Bavaria, entered the service of Alessandro Farnese, governor-general of the Netherlands, at Brussels. Subsequently he established an academy at Antwerp, at which Rubens received his earliest instruction in painting. He passed the latter part of his life in Brussels. His chief works, in the style of the later Roman school, are to be found in the churches of Antwerp and Brussels. He published a "History of the War of the Batavians" from Tacitus, illustrated with engravings from his own designs.

VANVITELLI, Luigi, an Italian architect, born in Naples in 1700, died there, March 1, 1773. He was of Flemish origin, his father, a native of Utrecht, having Italianized his name Van Witel into Vanvitelli. At the age of 26 young Vanvitelli was appointed architect of St. Peter's in Rome. His chief work is the royal palace at Caserta, Naples, a parallelogram 780 by 570 feet, in the richest style of Italian architecture. It was commenced in 1752, and in 1757 Vanvitelli published a folio volume of the plans under the title of *Dichiarazione de' disegni del reale palazzo di Caserta.*

VAN WERT, a N. W. co. of Ohio, bordering on Indiana, drained by the St. Mary's and tributaries of the Auglaize river; area, 390 sq. m.; pop. in 1860, 10,238. The surface is level and mostly covered with a heavy growth of valuable timber. The soil is a rich loam resting on a substratum of blue marl. The productions in 1850 were 67,175 bushels of Indian corn, 31,900 of wheat, 12,257 of oats, and 2,371 tons of hay. There were 5 churches, 2 newspaper offices, and 1,762 pupils attending public schools. The Miami canal passes along the E. border of the county, and it is intersected by the Pittsburg, Fort Wayne, and Chicago railroad. Capital, Van Wert.

VAN ZANDT, a N. E. co. of Texas, bounded N. E. by the Sabine river, and drained by affluents of the Sabine, Neches, and Trinity; area, about 620 sq. m.; pop. in 1860, 3,778, of whom 322 were slaves. The surface is undulating and the soil fertile. The productions in 1850 were 30,920 bushels of Indian corn, 8,486 of sweet potatoes, 16,040 lbs. of butter, and 1,646 of wool. Capital, Canton.

VAPEREAU, Louis Gustave, a French author, born in Orleans, April 4, 1819. He studied at the normal school, and in 1842 was secretary to Victor Cousin, whom he assisted in his labors on Pascal's *Pensées*. About the same time he became professor of philosophy at the college of Tours, retaining that office for 10 years, and being for half that time also professor of German. On the reorganization of the system of public instruction in 1852, he went to Paris, and soon afterward was admitted as an advocate, devoting most of his time however to various literary enterprises. One of the most important of these was the *Dictionnaire universel des contemporains* (8vo., Paris, 1858), which cost him 4 years' labor. A supplement appeared in 1859, and a new edition in 1861. In 1857 M. Vapereau organized on a new plan the *Bulletin international*, a repertory of universal bibliography, and in 1859 commenced an annual review of French literature, under the title of *L'année littéraire et dramatique.* He has also contributed to *La liberté de penser* papers on the colony of Mettrai, divorce, &c., and to the *Dictionnaire des sciences philosophiques* articles on law and philosophy.

VAPOR. See EVAPORATION.

VAPOR BATH. See BATH.

VAR, a S. E. department of France, in Provence, bounded N. by the department of Basses-Alpes, E. by the department of Alpes-Maritimes, S. by the Mediterranean, and W. by the department of Bouches-du-Rhône; area, 2,773 sq. m.; pop. in 1862, 315,526. The chief towns are Draguignan, the capital, Toulon, Brignoles, and Grasse. The Hyères islands, and the small islands of Lérins and Marguerite, lie off the coast, which is indented by numerous bays, including those of Jouan, Napoule, Fréjus, Grimaud, Hyères, and Toulon. The surface is generally mountainous and rugged, particularly in the N. and N. E., where it is traversed by offsets from the Alps, and the only extensive tracts of level ground lie along the coast. The most important rivers are the Var, Verdon, Esteron, and Argens; and there are several extensive lagoons along the shore. Coal, iron, and lead are found, but only the first is worked. About ⅓ of the surface is arable, ⅓ covered with forests, ¼ waste, and the remainder planted with vines. The soil is not naturally fertile. The manufactures and productions consist chiefly of wine, fruit, silk, paper, leather, coarse woollens, perfumes, olive oil, &c. The coast fisheries are valuable, particularly those of tunny and anchovies.

VARALLO, a town of Piedmont, remarkable for its picturesque beauty, on the left bank of the Sesia, 30 m. N. W. from Novara; pop. 3,400. It has manufactures of iron and copper, which are mined in the neighborhood, and a famous hill, the Sacro Monte, with a sanctuary known as *La nuova Gerusalemme*, founded in 1486 by Bernardino Caimo, a noble Milanese, consisting of a large church surrounded by 50 chapels or oratories, having within them groups of figures modelled in terra cotta and painted, representing subjects from sacred history. The church of St. Francis at the foot of the mount possesses a fine series of frescoes by Gaudenzio Ferrari, depicting events in the life of the Saviour.

VARANES, or BAHRAM, the name of six Persian kings of the dynasty of the Sassanidæ. I. Son of Hormuz or Hormisdas I., reigned from A. D. 274 to 277. He waged war with Zenobia and Aurelian, put Manes to death, and banished the Manichæans. II. An adoptive son of the preceding, reigned from 277 to 294. He was at first a cruel prince, but was softened by the influence of the magi. The Roman emperor Carus invaded his kingdom, but died suddenly when apparently about to complete its subjugation. III. Son and successor of the preceding, reigned only 8 months. IV. Brother of Sapor III., reigned from 390 to 404. He founded Kermanshah. He fell in resisting a rebellion. V. Eldest son and successor of Yezdegird I., reigned from 420 or 421 to 448. He was surnamed the "Wild Ass" because of his passion for hunting that animal; unmercifully persecuted the Christians; waged famous wars against the Tartars and Indians; and was finally drowned in a well together with his horse. He is a favorite hero of Persian poets and story tellers. VI. Reigned from 590 to 591. He was the general of Hormuz IV., and being treated with ingratitude after the most brilliant services, obtained the throne through revolt. Unable to maintain himself against Chosroes II. aided by the Greek emperor Maurice, he fled to Toorkistan, where he was received with great honor. He died by poison, and is a prominent figure in Persian literature.

VARANGIANS. See NORTHMEN, vol. xii. p. 405.

VARCHI, BENEDETTO, an Italian author, born in Florence in 1502, died Dec. 10, 1565. He was sent by his father to Pisa to study law, but abandoned it after his death and applied himself to literature. After the destruction of the Florentine republic he went to Padua and Bologna, but some years afterward was invited by the grand duke Cosmo to Florence, although he had been opposed to the Medici. There he was appointed one of the directors of the new Florentine academy, and was commissioned to write a history of Florence from the year 1527 to 1538. The work, on account of its truthfulness, was not published at that time, but enough of it got abroad to subject Varchi to a personal assault, in which he received several wounds. He also wrote a grammatical treatise on the Tuscan language, entitled *L'Ercolano*, and poetry which was suppressed on account of its obscenity. His history, which was printed at Cologne in 1721, is valuable, though exceedingly voluminous and charged with too much partiality to the house of Medici.

VARGAS, LUIS DE, a Spanish painter, born, according to Cean Bermudez, in Seville in 1502, died in 1568. He is said to have passed 28 years in Italy, and to have been a pupil of Perino del Vaga. He subsequently established himself in Seville, where he passed the remainder of his life in great esteem as a painter in oils and fresco. The picture in the cathedral of that city called the *Gamba*, representing the human genealogy of Christ, is esteemed his masterpiece. His works are rare however in Spain, those in fresco having for the most part perished, and are seldom met with elsewhere. He was particularly distinguished as a portrait painter. He was singularly devout in his religious duties, was in the habit of lying several hours a day on his coffin to meditate on death, and left a very complete collection of hair shirts, scourges, and other instruments of mortification and torture.

VARI. See Lemur, vol. x. p. 452.

VARICOSE VEINS, veins in a state of permanent and preternatural dilatation. The cause of the disease is to be looked for in some obstruction to the return of blood through the affected veins. In some cases the obstruction may be in the heart itself; old cases of heart disease, when the right side of the heart becomes involved, are apt to be attended with a varicose condition of the veins of the neck. The pressure of tumors, aneurisms, &c., upon a large venous trunk, causes a varicose condition of its superficial branches; the pressure of the enlarged uterus in pregnancy is a fertile source of varicose veins of the lower extremities; a varicose condition of the hæmorrhoidal veins constitutes piles, of those of the testicle varicocele. A varicose condition of the veins of the lower extremity, arising from certain occupations which demand the long continued maintenance of the upright posture, from repeated pregnancies, and sometimes from weakness of the coats of the veins themselves, is an exceedingly common complaint. The disease affects principally the internal and external saphenæ veins, especially the former. The veins become dilated, sometimes equably, sometimes with knots and protuberances distributed along their course. They are lengthened as well as dilated, their course becoming more tortuous. Sometimes the coats of the vein are thicker, sometimes thinner than natural, or both states may be present in the same vein. They are apt to cause more or less œdema of the affected limb, with a feeling of weight and fulness; sometimes they give rise to or are accompanied by ulcerations which are very hard to heal; occasionally, from gradual thinning of this coat or from accident, they burst and give rise to copious hæmorrhage, which may even prove fatal.—The annoyance and suffering attending varicose veins may be very much alleviated by the application of a firm roller, or better still, an elastic stocking, to the affected limb, thus affording equable support to the distended veins; the patient at the same time should be cautioned not to maintain too long the upright posture. Various operative proceedings have been tried with a view of obliterating the diseased veins and thus curing the disease. These are not always successful, nor are they unattended with danger. The best perhaps is that of M. Velpeau. He passes a needle beneath the trunk of the affected vein, and applies a twisted suture around it; if sufficient inflammation ensue to cause the occlusion of the vein, the needle may be withdrawn in a few days; if not, it is permitted to ulcerate its way through.

VARIETY, a group of animals or plants approaching very near, but subordinate, to species, and, when permanent, with difficulty distinguished from them. While most naturalists admit the existence of varieties, even in wild animals, a few deny that there is any such thing in nature as a variety outside the circle of domesticated species, except as a manifestation of different stages of growth or of sexual distinction. Permanent varieties transmit constantly their peculiarities to their offspring, and differ from species, according to Prichard, in these peculiarities not being coeval with the race, but having sprung up since the commencement of its existence, constituting a deviation from its original character. There can be little doubt that many groups, now considered as distinct species, are in this sense only permanent varieties. According to Darwin, these varieties would be permanent only until the development of some part should, by a process of natural selection, elevate the species in the animal scale, if to its advantage in the struggle for life, or tend to extinguish it if to its disadvantage. Varieties are best studied in the domestic animals, as the dog, horse, sheep, goat, ox, hog, poultry, and pigeons, and in cultivated plants; they have been sufficiently detailed in the articles treating of these animals and plants respectively, and show that in many instances the variation produced by changes of external conditions is greater than often exists between acknowledged different species. (See Species.)

VARIOLOID, a mild form of small pox, sometimes occurring in persons who have been previously vaccinated or inoculated, and the virus of which will produce small pox in those not thus protected. (See Small Pox, and Vaccination.)

VARNA, a seaport town of European Turkey, in Bulgaria, situated on the shore of the Black sea, 160 m. N. N. W. from Constantinople, in lat. 43° 12′ N., long. 27° 56′ E.; pop. about 15,000, of whom one half are Christians. It occupies an elevated position on the N. W. side of a bay formed by two rocky promontories, and is defended by a stone wall, batteries, and outworks. The houses are nearly all of wood and of very irregular appearance, being of various colors with red-tiled roofs. There are several mosques, but no other buildings that deserve particular notice. The bay is sheltered on the N. and N. E. from the most dangerous winds of the Black sea; and the trade carried on is very considerable. The exports consist of grain, hides, tallow, and other produce; in 1859 the imports amounted to $1,420,000, and the exports to $1,552,800. From 5,000 to 6,000 vessels enter the port every year, including French, Austrian, and Russian steamers. To the W. of the town is situated a lake about 12 m. long and 2 m. broad, which it has been proposed to connect with the bay by a ship canal, and thus supply Varna with one of the best harbors in the Black sea.—King Ladislas of Poland and Hungary lost here a large part of his army and his life, in a battle against Sultan Amurath II., in 1444. The Russians captured the town in 1828. On Aug. 10, 1854, about one quarter of the houses were destroyed by fire, together with a large quantity of military stores prepared for the expedition against the Crimea. In September of the same year the British and French fleet sailed from Varna with the troops destined for the invasion of that part of the Russian empire.

VARNHAGEN VON ENSE, **Karl August Ludwig Philipp**, a German author, born in Düsseldorf, Feb. 21, 1785, died Oct. 10, 1858. His father was established as a physician at Strasbourg on the outbreak of the French revolution, and was obliged to emigrate on account of his sympathy with the revolutionary ideas. Intended for the medical profession, the son began at the age of 12 to study anatomy in connection with the classics and literature, read the *Christus Patiens* of Grotius while making clinical observations, and in 1800 entered the Pépinière, a medical school in Berlin. He devoted himself equally to medicine, poetry, and philosophy; was for a time private tutor in a noble family, where he became intimate with Chamisso, with whom he began to publish in 1804 a *Musenalmanach;* abandoned professional for literary studies; listened to A. W. von Schlegel and Fichte at Berlin, and to Wolf and Schleiermacher at Halle; and returned to Berlin when the university of Halle was closed by the invasion of Napoleon. He there became acquainted with Rahel Levin, whom he afterward married, the centre of a distinguished circle, exerting by the vigor and freshness of her intellect a singular influence alike over the prince Ludwig Ferdinand, the architect Genelli, the statesman Gentz, the Schlegels, the Humboldts, and Schleiermacher. He pursued his studies at Tübingen, but left them in 1809 to join the Austrian army as ensign, was wounded at Wagram, taken prisoner by the French, and exchanged at Vienna, and in 1810 accompanied Count von Bentheim to Paris. He was present at the festival given by the Austrian ambassador, Prince Schwartzenberg, to the emperor and empress (July 1, 1810), attended by the most illustrious persons in Paris, which closed with a conflagration in which the princess Schwartzenberg perished. He afterward lived in studious retirement, chiefly at Prague, Vienna, and Berlin, enjoying the friendship of the minister Stein, and of Justus von Gruner; joined the Russian army as captain under Fetterborn in 1813; accompanied that general first to Hamburg, and then in the advance to Paris; and published a narrative of each campaign. He married in 1814 Rahel Levin, whom nearly 20 years later he declared "still the freshest and brightest feature in my life;" was chosen to aid the chancellor Hardenberg at the congress of Vienna; again entered Paris with the allies in 1815; was for three years minister resident at Carlsruhe; declined in 1819 the appointment of minister resident at Washington; and from that time lived chiefly at Berlin, engaged in literary pursuits, active and influential in political affairs, but without official employment, except an extraordinary mission to Hesse-Cassel in 1829. He had already been associated with Neumann, Fouqué, and others in minor publications, and had published *Deutsche Erzählungen* (1815) and *Vermischte Gedichte* (1816), few of which he subsequently deemed worthy of a place in his collected works. In 1822 appeared *Geistliche Sprüche des Angelus Silesius*, with an introduction, reproduced in 1849 with selections also from Saint Martin, and with annotations on both by Rahel; and in 1823 a collection of characterizations of Goethe, entitled *Göthe in den Zeugnissen der Mitlebenden.* His next work was a series of biographies of German adventurers, soldiers, poets, and mystics, the *Biographische Denkmale* (5 vols., Berlin, 1824–'30). These were followed by a memorial of his friend, the philosophic physician Erhard (1830), and by a collection of his contributions to literary periodicals, entitled *Zur Geschichtschreibung und Literatur* (1833). After the death of his wife he published two memorials of her, entitled *Rahel, ein Buch des Andenkens für ihre Freunde* (3 vols., 1834), containing selections from her correspondence, and *Galerie von Bildnissen aus Rahels Umgang* (2 vols., 1836), a series of delineations of the distinguished members of her circle. Renewing his biographical labors, in which he especially excelled, he produced successively *Leben der Königin von Preussen Sophie Charlotte* (1837), *Leben des Feldmarschalls Grafen von Schwerin* (1841), *Leben des Feldmarschalls Keith* (1844), *Hans von Held* (1845), *Das Leben Karl Müllers* (1847), and *Leben des Grafen Bülow von Dennewitz* (1853). He collected, under the title of *Denkwürdigkeiten und Vermischte Schriften* (7 vols., 1837–'46), numerous studies on the most prominent men and events of his time, memorials of his life, tales, criticisms, and poems. A *Schlichter Vortrag an die Deutschen* appeared from him during the revolutionary events of 1848. He holds high rank among the masters of German prose, and his writings are particularly valuable for their sagacious characterizations of the statesmen and thinkers with whom he was associated. He pictured his own age as a critical and revolutionary epoch, in which religion, government, society, and all modes of life and thought were gradually assuming new and unexpected forms. He was buried, at his request, without priestly attendance; but a vast procession, with Alexander von Humboldt at its head, followed him to the tomb. Of his *Tagebücher* 4 volumes have been published (Leipsic, 1861–'2).—**Rahel Antonie Friederike**, wife of the preceding, born in Berlin in June, 1771, died there, March 7, 1833. She was of a Jewish family, which bore the name either of Levin or Robert, and a sister of the poet Ludwig Robert. She early displayed extraordinary talent, and, though not carefully educated, became the centre of a circle of distinguished authors and artists. Without rank, beauty, or wealth, or, as Carlyle says, any artificial nimbus whatever, she charmed the most intellectual by her lively and intelligent sympathy, and by her habit of speaking her thoughts with little regard to conventionalisms. She became a Christian before her marriage with Varnhagen von Ense in 1814, accompanied him on his missions, and in every capital maintained her high social reputation. She did not aspire to authorship, though she is said to have aided her husband in his labors; and her letters and aphorisms, which he published, do not reveal the talent and charms traditionally attributed to her conversation.

VARNISH, a fluid which, when applied to the surface of wood and other substances, by the evaporation or chemical change of a portion, leaves upon it a shining coating, impervious, or nearly so, to air or moisture. Varnishes are almost invariably solutions of one or more resinous substances in a liquid, which will either completely volatilize or dry and harden in the air; and when good, they should present the following characters: 1, after drying, they should remain brilliant, not presenting a greasy or tarnished surface; 2, they should adhere closely to the surfaces to which they may be applied, so as not to scale off even after considerable time; 3, their drying should be rapid, and their hardness when dry as great as possible without rendering them too brittle. The principal substances entering into their composition are: as solvents, the oils of linseed, poppy, and turpentine, alcohol, ether, wood naphtha, and pyroacetic spirit; as solid constituents, copal, amber, mastic, sandarach, lac, elemi, dammar, benzoin, rosin, animé, and caoutchouc; as coloring materials, gamboge, dragons' blood, aloes, and saffron. They may all be referred to one of 4 classes, viz.: ether varnishes, spirit varnishes, volatile oil varnishes, and fixed oil varnishes.—Of the first class, only one kind appears to be employed, which serves to repair the glazing of the colored enamels used in jewelry where this is accidentally injured, and is made by putting (in small portions at a time) 5 parts by weight of the best finely pulverized copal into a flask containing 2 parts of pure sulphuric ether, corking the bottle, shaking for half an hour, and leaving at rest until the next day, when, if the solution is not perfectly clear, more ether must be added, and the mixture again shaken. This dries so rapidly as to bubble up under the brush from the too rapid evaporation of the ether; and it is therefore necessary to previously moisten the surface to be varnished with oil of rosemary, lavender, or even turpentine, which is immediately wiped off again with a cloth, the trace which remains sufficing to retard the evaporation and so allow the varnish to be spread.—Spirit varnishes, made with alcohol, are in general easily prepared and applied, soon dry, and have no disagreeable smell; they are, however, liable to scale off or crack, and are incapable of resisting friction or blows. To diminish this tendency, small quantities of oil of turpentine are often added to them, or some of the softer and more adhesive resins are employed in their composition. Nearly all the solid ingredients and coloring materials above enumerated, as well as many others, are used in the great variety of spirit varnishes, differing according to the special purpose to which they are to be applied, the price at which they must be sold, and the fancy of the manufacturers, of whom hardly two use the same receipt; which is also true of all the other kinds. The alcohol should not be of less strength than 40° to 36° Baumé (sp. gr. 0.830 to 0.849), as otherwise the resins dissolve with much more difficulty, and the varnish will neither be so brilliant nor so drying. Three ways of making the solution are employed, viz.: 1, by simply digesting the resins, &c., in the proper quantity of alcohol, either in the shade or exposed to the sun, occasionally shaking the bottle; this takes a long time, and many substances cannot be dissolved in this way, but the product has the least possible amount of color; 2, by heating over a water bath, which is a much more rapid process, but produces more highly colored varnishes; 3, by heating over an open fire, which still more changes the color of the resins, and consequently of the varnish, but it is so much more rapid that it is employed almost exclusively for manufacturing purposes.—Oil of turpentine is almost the only volatile oil employed in varnishes, and the most important one into which it enters is copal varnish. (See COPAL.) The ingredients and modes of preparation are nearly the same as for spirit varnishes. An important difference between the two kinds is, that spirit varnishes are injured in quality by keeping, while those with oil of turpentine are very much improved by it, from the more intimate union which takes place between the resins and the oil. When a picture is covered with newly made varnish, a portion of the oil abandons the resins and combines with the paints; but this effect does not take place when it is 5 or 6 months old, and as the durability is almost in direct proportion to the amount of fatty residue from the oil, any cause which removes the oil will naturally impair it.—Fixed oil varnishes are almost entirely made with linseed oil, for which poppy oil is however sometimes substituted, and they generally contain also a large proportion of oil of turpentine. The resins used are almost exclusively the different kinds of copal, and amber. In consequence of the slow evaporation of the solvent, and the large amount of residue from it, they are, of all varnishes, the slowest in drying, but the most durable; they are therefore employed for all the purposes to which spirit and turpentine varnishes are not suited, on account of the feeble resistance that they offer to the action of the solar light and heat and of inclement weather; especially for doors and windows, the fittings of shops, carriages of all kinds, &c. For interior work they are the best wherever a trifling degree of color is not objectionable, as they are both more durable and will easily wash, especially as the time of drying can be much reduced by a previous preparation of the oil (see

LINSEED OIL), or by the use of dryers. For articles of sheet iron, tin, copper, or brass (see JAPANNING), and for all articles exposed to constant wear and frequent rubbing, they are particularly adapted. In consequence of the difficult fusibility of the copal, a very different process from that used for spirit and turpentine varnishes must be employed in their preparation. The resin is first melted over an open fire; and when perfectly liquid, the linseed oil, heated to 300° or 400° F., is incorporated with it, and finally the oil of turpentine. It is indeed possible to melt copal directly in boiling oil, and the subsequent addition of a proper quantity of oil of turpentine will bring it to a proper consistence; but as in this case the oil is always more or less burnt, the varnish is both more highly colored and less drying, and this method has been generally abandoned. Great care should be taken that the resins used are of equal fusibility, as if the heat is much raised or long continued after the complete fusion of a part, the amount of color will be much greater than even if the more infusible parts alone were used. The oil does not combine with the liquid copal; it simply mixes with it and divides its particles, and thus enables it to mix with the oil of turpentine, which should be introduced little by little, with continual stirring, so as to thoroughly incorporate the materials. The principal causes of failure in these operations, producing varnishes deficient in brilliancy, are: 1, the resins not having been heated sufficiently to bring them to the proper degree of liquidity to mix intimately with the oil; 2, adding the oil either too cold or too rapidly, so as to cool the melted resin too much; 3, adding too rapidly to the well prepared mixture of oil and copal cold oil of turpentine; 4, allowing the mixture of oil and copal to become too cold before introducing the oil of turpentine; 5, using the oil too hot or boiling, especially if the resin has not been heated long enough to allow all the volatile substances to escape, when the addition of the boiling oil will produce a violent effervescence, which compels the removal of the varnish from the fire, and the immediate addition of oil of turpentine. In all these cases, the mixture is wanting in uniformity, and a surface varnished with it is covered with very shining points mingled with less shining ones, and consequently presents a dull appearance. The 3d cause of failure might be avoided by using boiling oil of turpentine instead of cold; but this method adds so very greatly to the danger of fire, to which a varnish manufactory is always extremely liable, that it is now rarely employed. In the manufacture of varnishes damp weather is injurious, causing them to absorb a sufficient amount of moisture to considerably impair their transparency.—Beside the 4 classes of varnishes above described, there are some others employed for special purposes which can scarcely be included under any of them. Dr. Bolley has recently described an India rubber varnish, which appears to possess valuable properties. The India rubber is cut into small pieces and digested in sulphuret of carbon, which forms a jelly with it; and by treating this with benzole, a large proportion will be dissolved. The liquid must be strained through a woollen cloth, and the sulphuret of carbon removed by evaporation in a water bath, after which the liquid may be diluted with an additional quantity of benzole. A more colorless solution is obtained by simply digesting the rubber for a number of days with benzole, frequently shaking the bottle, and separating the liquid part by straining. The liquid obtained in either way incorporates easily with all fixed or volatile oils, dries very fast, does not shine unless mixed with resinous varnishes, is extremely flexible, may be spread in very thin layers, and is not affected by air or light. It is well adapted for varnishing maps and prints, as it does not affect the whiteness of the paper, does not reflect light disagreeably as resinous varnishes do, and is not liable to scale off.—Another valuable varnish, called "milk of wax," is prepared by melting a certain quantity of white wax, adding to it while in fusion an equal quantity of alcohol, of specific gravity 0.830, stirring the mixture, and pouring it out upon a porphyry slab, on which it is ground with a muller until it becomes smooth and homogeneous, when water is mixed in by degrees to the amount of 4 times the weight of the wax, and the emulsion finally strained through canvas. This may be spread with a smooth brush on the surface of a painting, allowed to dry, then fused by passing a hot iron over it, and when cold rubbed with a linen cloth to bring out the lustre. It is to some such process as this that the ancient paintings on the walls of Herculaneum and Pompeii owe their freshness at the present day.—The following comprise some of the best receipts for varnishes:

Varieties.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.
Shell lac, lbs.	..	..	..	..	..	2	2	..	..	..	..	1½	1	½
Mastic, "	..	..	..	..	..	1	..	..	..	..	..	..	..	..
Sandarach, lbs.	..	..	..	..	2	4	..	..	..	..	..	..	..	..
Dammar, "	..	..	..	..	..	..	..	..	..	..	4	..	..	..
Rosin, "	..	..	..	..	..	..	..	4	..	..	..	..	..	..
Amber, "	..	..	..	..	..	..	..	..	..	6	..	..	..	..
Benzoin, "	..	..	..	..	..	1	..	..	..	..	..	..	..	..
Copal, "	8	7	8	8	..	..	..	..	..	..	..	..	..	..
Spirits of wine, galls.	..	..	..	..	1	5	1	..	..	..	..	1	1	..
Oil of turpentine, galls.	3	3	3½	5½	..	..	..	1	1	4	1	..	..	1
Linseed oil, galls.	2	½	2	2½	..	..	..	..	..	2	..	..	..	..
Turpentine, lbs.	..	..	..	..	..	2	..	..	..	..	..	..	..	..
Turpentine varnish, pint	..	..	..	..	..	..	1	..	..	..	..	..	..	..
Venice t'pentine, oz.	..	..	..	..	18	..	18	..	..	..	..	..	..	..
Canada balsam, gall.	..	..	..	..	..	..	..	..	1	..	..	..	..	..
Powdered glass, lbs.	..	..	..	..	..	4	..	..	..	..	..	..	..	..
Black sealing wax, lbs.	..	..	..	..	..	..	..	..	..	..	..	..	3	..
Red sealing wax, lbs.	..	..	..	..	..	..	..	..	..	..	..	2½	..	..
Asphalt, lbs.	..	..	..	..	..	..	..	..	..	..	..	..	..	3

No. 1 is copal varnish for fine paintings; 2, cabinet varnish; 3, best body copal varnish, for bodies of coaches, &c., which require polishing; 4, carriage varnish for parts not requiring to be polished; 5, best white hard spirit varnish; 6, white spirit varnish for violins; 7, brown hard spirit varnish; 8, turpentine varnish; 9, crystal varnish; 10, amber varnish; 11, paper varnish; 12, sealing wax varnish; 13 and 14, black varnishes. For other notes on varnishes, see Copal, French Polish, Japanning, and Lacquer.—Beside all these compound varnishes, the liquid resins which exude from many species of trees, especially in China, Japan, Burmah, and India, are used as varnishes, either crude or with slight preparation. (See Japanning.) The Chinese varnish is said to be produced by the *augia Sinensis*, and is black when simply dried, but is colored by various pigments. The Japan varnish of Kämpfer and Thunberg is *rhus vernix*, and that of the Malayan islands *stagmaria verniciflua*. The juice of *holigarna longifolia* is used in Malabar for varnishing shields; the Burmese varnish tree is a *melanorrhœa*, and a fine liquid varnish is yielded by *vateria Indica* and *V. lanceæfolia*. A resinous juice is also employed by the Feejeeans as a varnish or glaze for their pottery.—Varnishes are applied to flat surfaces in the same manner as paints, with brushes, which should be soft and perfectly clean. For spirit varnishes camel's hair pencils and brushes are used; and for turpentine and oil varnishes, which require less delicacy, flat brushes, made of fine soft bristles, are generally employed, or sometimes even ordinary painting brushes, but these are rather too harsh. The varnishes should all be uniformly applied, in very thin coats, sparingly upon the edges and angles, where they are liable to accumulate; and sufficient time should elapse between the application of the coats for the perfect evaporation of the solvent. This varies according to the kind of varnish and the state of the atmosphere; but in general spirit varnishes require 2 to 3 hours, turpentine varnishes 6 or 8, and oil varnishes sometimes as much as 24 hours. If a second layer is added before the first is completely hardened, this is protected from the air by it, can never dry perfectly, and remains soft and adhesive. In using any spirit varnish, the operation should be conducted in a dry atmosphere, as all solutions of resins in alcohol are precipitated by water, even in the state of vapor; so that not only in damp weather, but even on a warm summer's day, when the atmosphere happens to be much charged with moisture, a milky or clouded appearance is often given to the surface of varnish, which is then said to be "chilled." The same bad effect is produced by cold currents of air, so that the varnishing room should not only be kept warm and dry, but free from draughts. The best temperature is about 72° F. When chilling has taken place, the brilliancy and clearness may frequently be restored by giving the surface another thin coat, and immediately holding the article sufficiently near to a fire to partially redissolve the chilled coat, taking care not to heat it so much as to raise blisters. The surface to be varnished should be smoothed with fine glass paper, to remove all traces of moisture and grease; and in stopping any minute holes, wax or some of the gums should be used, but nothing of a greasy nature. Much tact and expedition are required in properly varnishing large surfaces with spirit varnish, so as to obtain a uniform smooth coat before it becomes too much thickened by evaporation. Wood and other porous surfaces absorb a considerable part of the first coat, which sinks in deeper at the soft parts and raises the grain of the wood. A second or even third coat is sometimes required to completely fill the pores, and the work should then be smoothed with fine glass paper, and the final coats applied. In order to economize the varnish, wood and paper are frequently sized over to prevent the varnish from sinking in; and for this purpose, thin size made from good glue is used for dark-colored surfaces, and for light surfaces a size prepared by boiling cuttings of white leather or parchment in water for a few hours, until they form a thin jelly, which is used rather warm; or sometimes solutions of isinglass or gum tragacanth are substituted. The finest varnished works, such as the woodwork of harps, first receive about 6 layers of white hard varnish to fill the pores, and are then rubbed quite smooth with fine glass paper; any ornamental painting is then done, after which 8 or 10 more coats are put on, the surface being rubbed with glass paper at every third coat to remove the brush marks. When hard, the surface is rubbed with fine pumice stone and water, allowed to stand for a few days, then polished with yellow tripoli and water, washed with a sponge, and wiped with clean wash leather. It is then rubbed all over by the fingers with fine tallow, wheat flour is dusted on, and after the removal of this the final polish is given with a piece of silk. Turpentine and oil varnishes are applied nearly in the same way as spirit varnishes; from their slower drying there is not the same difficulty in uniformly covering large surfaces, but the same precaution with regard to heat and dryness should be observed.

VARNUM, James Mitchell, an American general, born in Dracut, Mass., in 1749, died in Marietta, Ohio, Jan. 10, 1789. He was educated at Rhode Island college, now Brown university, where he was graduated with the first class, studied law, and established himself in that profession at East Greenwich, R. I. When the revolution broke out, he was appointed by the general assembly colonel of a regiment to be raised in the counties of Kent and Kings, and he afterward received a commission from congress when Washington was appointed commander-in-chief. In Feb. 1777, he was promoted to the rank of brigadier-general; and he commanded all the body of troops on the Jersey side of the Delaware, when the British and Hessians took possession of Philadelphia. He continued in active service during the year 1778, and commanded a brigade in Sullivan's expedition on Rhode Island. In

1779 he resigned his commission, there being at that time more general officers in the service than were required. He was elected delegate from Rhode Island to the confederated congress in 1780, and again in 1786. In 1787 he was appointed one of the judges of the North-West territory, and removed to Marietta, the first city established west of the Ohio.

VARRO, Marcus Terentius, a Roman scholar and author, born in 116 B. C., died in 28. He received a liberal education, held a high office in the navy in the wars against the pirates and against Mithridates, and at the commencement of the civil war was serving in Spain as legate of Pompey. When Cæsar marched into that country after the reduction of Italy, Varro was obliged to surrender his forces; but still adhering to the aristocratic party, he joined Pompey in Greece, and remained faithful to him until the victory of Pharsalia had made Cæsar master of the Roman world. Varro's villa at Casinum was taken and plundered by Antony, but Cæsar treated him kindly, and employed him to superintend the collection and arrangement of the works in the library at Rome designed for the public use. From this time Varro lived in retirement, spending his time chiefly at his residences near Cumæ and Tusculum. During the second triumvirate he was put by Antony on the list of the proscribed, but by the aid of friends his life was saved, though his libraries were destroyed. He gained the favor of Augustus, who appointed him superintendent of the library founded by Asinius Pollio. Varro was called by Quintilian "the most learned of the Romans," and according to his own statement he wrote 490 books. "He had read so much," says St. Augustine, "that we must feel astonished that he found time to write any thing; and he wrote so much that we can scarcely believe that any one could find time to read all that he composed." He wrote historical, antiquarian, biographical, critical, philosophical, and geographical treatises, beside others of a miscellaneous character. Some of his works perished with his library, and only one has come down to our time entire. This is the treatise *De Re Rustica*, written when he was 80 years old, and the best work on ancient agriculture extant. The best edition is that in the *Scriptores Rei Rusticæ Veteres Latini* of J. G. Schneider (4 vols. 8vo., Leipsic, 1794–'7; English translation by Owen, 8vo., London, 1803). Of a grammatical treatise entitled *De Lingua Latina*, 6 books (v. to x.) out of the original 24 are extant, though mutilated; the best edition is that of Müller (8vo., Leipsic, 1833). Varro was sometimes called Reatinus from his estate at Reate.

VARRO, Publius Terentius, a Latin author, surnamed Atacinus, from the Atax, a river of Gallia Narbonensis, where he was born, according to Jerome, in 82 B. C., died in 37. At the age of 35 he applied himself to the study of Greek, and wrote epic, elegiac, and epigrammatic poems, some of which were celebrated among the Romans, but only fragments of which have come down to our time. The most famous was the *Argonautica*, which was a free translation of the poem of Apollonius Rhodius.

VASA, Gustavus. See Gustavus I.

VÁSÁRHELY, or Hód-Mező-Vásárhely, a market town of S. Hungary, in the county of Csongrád, situated in a fertile region on the Hód pond or lake, near the E. bank of the Theiss, 14 m. N. E. from Szegedin; pop. in 1857, 42,500. The inhabitants are almost all agriculturists of Magyar or Slavic race, cultivating the surrounding country to a great extent. The place has considerable fairs.

VASARI, Giorgio, an Italian painter, architect, and historian of art, born in Arezzo in 1512, died in Florence in 1574. In early life he was placed under the instruction of Michel Angelo, Andrea del Sarto, and other Florentine masters, and he afterward studied at Rome, where under the patronage of Cardinal Ippolito de' Medici he acquired wealth and reputation. Having executed several important commissions in architecture and painting for the Vatican, he went in 1553, on the invitation of Cosmo I., to Florence, and there passed the remainder of his life. His reputation now rests almost entirely upon his *Vite de' piu eccellenti pittori, scultori, e architetti*, undertaken at the request of Cardinal Farnese, and first published in Florence in 1550 (2 vols. 8vo.). A 2d edition, with large additions, bringing the history down to the year 1567, was published in 1568 in 3 vols. 4to.; and the work enjoyed a considerable popularity in Italy, having been repeatedly republished during the last 3 centuries. The only English translation is that by Mrs. J. Foster, which forms 5 vols. of Bohn's "Standard Library."

VASCO DA GAMA. See Gama.

VASCONCELLOS, Antonio Augusto Teixeira de, a Portuguese author, born in Oporto, Nov. 1, 1816. He studied at the university of Coimbra, and in 1845 edited the *Illustração*. During the insurrection of the following year he became an officer of ordnance under Sa da Bandeira, and afterward prefect of Villa Real, secretary to the junta, and editor of the *Revolução de Setembro*. In 1850 he went to Angola, and afterward, settling at St. Paul de Loanda, was elected president of the municipal body there; but having quarrelled with the governor-general of the colony, he returned to Portugal, and founded in 1853 a journal called the *Arauto*. Visiting Paris in 1855 to attend the statistical congress, he fixed his residence there, and established in 1858 the Iberian society for the purpose of publishing works relating to Portugal, Spain, and Brazil. Among his works are: *Carta philosophica do estudo da historia Portuguesa* (1840); *Roberto Valença*, a romance (1846); *Carta do trafico dos escravos na provincia d'Angola* (1853); *Le Portugal et la maison de Bragance* (8vo., 1859); and *A fundação da monarchia Portuguesa* (Lisbon, 1860).

VASE. See Pottery and Porcelain.

VASSAL (low Lat. *vassalus*, from the Welsh *gwas*, a young man or page), the grantee of a fief, feud, or fee, or one owing service and homage to a superior lord in virtue of land held of him. The term applies strictly to a landholder, but is frequently applied in popular language to a servant or household domestic. (See Feudal System.)

VASSAR, Matthew, founder of the Vassar female college, born in the county of Norfolk, England, in 1792. His father removed to the United States in 1796, settled in 1797 on a farm about 3 miles from the present city of Poughkeepsie, and in 1801, in company with his brother, commenced a brewery in Poughkeepsie, which they continued till 1812, when it was burned. Young Vassar, who had been for a time in school and subsequently an assistant in a country store, began the brewery business in a small way, and by steady industry accumulated a large fortune. In Feb. 1861, he delivered to trustees incorporated for the purpose by the legislature bonds, stocks, and other securities to the amount of $408,000, for the founding of the Vassar female college, accompanying the gift with a statement of his wishes in regard to the plan of the college and the extent of its course of instruction. About one half of this sum was to be expended in the edifices and grounds for the college, for which he gave a beautiful site of 200 acres about one mile from Poughkeepsie, and the remainder to form an endowment for the partial support of the professorships. It was not his purpose to make it a charity school, but to offer the highest educational facilities to females at a moderate expense, and to admit as beneficiaries those who were unable to defray even this expense. His plan comprehended an art gallery and a good and gradually increasing library, as well as a corps of instructors in the English language and literature, the modern languages of Europe and their literature, ancient languages, mathematics, all the branches of natural science, including anatomy, physiology, and hygiene, intellectual and moral philosophy, political economy and the science of government, æsthetics, domestic economy, and the reading and study of the Scriptures. All sectarian influences were to be carefully excluded. The buildings were commenced in the spring of 1861, and it is expected that they will be completed and the first class organized in the autumn of 1863.

VATER, Johann Severin, a German linguist and theologian, born in Altenburg, May 27, 1771, died in Halle, March 16, 1826. He studied philosophy and theology at Jena and Halle, and became extraordinary professor of theology at the former place in 1796, and ordinary professor of theology and oriental literature at Halle in 1800. He was appointed in 1809 professor of theology and librarian in the university of Königsberg, but in 1820 returned to Halle. His principal philological labor was the completion of the *Mithridates* of Adelung, beside which he left grammars of the German, Polish, Russian, and Hebrew languages, several works on universal grammar, and an index of dictionaries and grammars of all languages. His studies were principally directed to the Hebrew. He also published a commentary on the Pentateuch, a critical edition of the New Testament, and several works on church history.

VATICAN, the papal palace at Rome, so called from its situation on the Mons Vaticanus, at the extreme N. W. part of the city. It adjoins the basilica of St. Peter, and is a little less than half a mile from the castle of S. Angelo, with which it communicates by a covered gallery built by Pope John XXIII. about the beginning of the 15th century. The palace, which now ranks as one of the most interesting and magnificent in the world, has grown up by degrees, and consequently exhibits a great want of harmony in its architectural proportions. There was a palace attached to St. Peter's certainly in the time of Charlemagne, and probably before the reign of Constantine. It was rebuilt by Innocent III. (1198–1216), and enlarged by Nicholas III. (1277–'81), but did not become the permanent residence of the popes until after their return from Avignon in 1378. Very little of the present edifice is older than the time of Nicholas V. (1447). The renovation of the old palace, which he commenced, was completed by Alexander VI., after whom that part of the building is now called the *appartamento Borgia*. The Sistine chapel was added by Sixtus IV. in 1474. Innocent VIII. (1484–'92) constructed the Belvedere villa a short distance from the palace, and Julius II. (1503–'13) connected it with the Vatican, by means of the celebrated *logge* and a terraced court. To Julius II. is also due the foundation of the museum. The portion of the Vatican which is now the ordinary residence of the popes lies on the E. of the *logge*, and was built chiefly by Sixtus V. (1585–'90) and Clement VIII. (1592–1605).—The whole palace, which is rather a collection of separate buildings than one regular edifice, occupies a space of 1,151 by 767 feet, and has over 200 staircases, 20 courts, and 4,422 rooms. The *scala regia*, or great staircase, is a masterpiece of Bernini, and chiefly remarkable for its perspective. It leads to the *sala regia*, built by Antonio di Sangallo as an audience hall for the reception of ambassadors, and decorated with frescoes by Vasari, Marco da Siena, Taddeo, and Federigo Zucchero, Giuseppe Porta, and others. The Sistine and Pauline chapels open into this hall, the former containing Michel Angelo's "Last Judgment," beside frescoes by Perugino, Ghirlandaio, and others, representing passages in the lives of Christ and Moses; the latter possesses Michel Angelo's frescoes of the "Conversion of St. Paul" and "Crucifixion of St. Peter." The chapel of San Lorenzo has a series of remarkable frescoes by Fra Angelico da Fiesole. The *stanze* of Raphael is the name given to 4 chambers decorated by the hand of that great master, the paintings in one representing events in the lives of Leo III. and Leo. IV.; in another, illustrations of the sciences of theology, philosophy, poetry, and jurisprudence; in the third, the triumphs and miracles of the church; and in the fourth, the sovereignty of the church. The frescoes on the roof of the first are by Perugino, and the last contains only two figures by Raphael, the rest having been completed after his death by Giulio Romano and others. The *logge*, already referred to, form a triple colonnade around 3 sides of the court of San Damaso, the uppermost story supported by columns, and the two lower by pilasters. They were built after designs by Bramante, and on one side of the court were painted from the designs of Raphael; they have been much injured by exposure to the weather and other causes, but are now protected by glazed sashes. The museum is one of the most magnificent collections of the kind ever made. Among its principal features are the gallery of inscriptions, containing over 3,000 specimens of ancient sepulchral inscriptions and monuments; the *museo Chiaramonte*, devoted to ancient sculptures, with the *braccio nuovo*, a fine hall added to it in 1817, and containing a semicolossal statue of an athlete, supposed to be the famous Αποξυομενος of Lysippus; the *museo Pio-Clementino*, devoted to works of the same class accumulated by Julius II., Leo X., Clement VII., Paul III., and especially Clement XIV. and Pius VI., and possessing the Torso Belvedere and the sarcophagus of Scipio; the *cortile di Belvedere*, containing bass-reliefs, statues, sarcophagi, baths, &c., among which are the Laocoön and the Apollo Belvedere; the halls of the animals, of the busts, and of the Muses, so named from the character of their principal statues; the gallery of statues, in which are the Apollo Sauroctonos and (supposed) Cupid of Praxiteles; the cabinet of the masks; the hall of the Greek cross, with the sarcophagi of Sts. Helena and Constantia, the mother and daughter of Constantine; the gallery of the candelabras; and the hall of the *biga*, so called from an antique 2-wheeled chariot in white marble. The Etruscan museum contains 12 chambers, filled with relics of the ancient inhabitants of Italy. The Egyptian museum, commenced by Pius VII., is inferior to many similar collections in other parts of Europe. The picture gallery contains more treasures than any other in the world, though the whole catalogue barely numbers 50 paintings. Among these are Raphael's "Transfiguration," "Madonna di Foligno," and "Coronation of the Virgin;" Domenichino's "Communion of St. Jerome;" and works by Titian, Andrea Sacchi, N. Poussin, Guido, Caravaggio, Baroccio, Perugino, Guercino, Fra Angelico da Fiesole, Pinturicchio, Correggio, Melozzo da Forli, Andrea Mantegna, and Paul Veronese.—The library was founded about the middle of the 15th century by Pope Nicholas V., at whose death it is said to have contained 9,000 MSS. The present building was erected by Sixtus V. in 1588, and the library now contains about 300,000 printed volumes and 24,000 MSS. The libraries of Cardinals Mai and Mezzofanti, and other valuable private libraries, have been from time to time added to the Vatican collection. The MS. collection, though not the largest, is the most valuable in the world.

VATTEL, Emmerich de, a Swiss publicist and jurist, born in Couret, in the principality of Neufchâtel, in April, 1714, died in Neufchâtel, Dec. 20, 1767. He was intended for the church, obtained his classical and philosophical education at the university of Basel, and went to Geneva to study theology, but was more attracted by the writings of Leibnitz and Wolf than by those of Calvin. After a residence of some years at Geneva, he visited Berlin in 1741, in search of an office under the government. While there he published a defence of Leibnitz's system against Crousaz, which he dedicated to Frederic the Great, and which brought him some reputation. In 1744–'5 he received an appointment at the court of Saxony in Dresden, and in 1746 was sent by the elector Augustus, who was also king of Poland, as Polish minister to Bern. While in this position he published some volumes of miscellaneous essays and poems, but devoted himself more particularly to the preparation of his great work, *Le droit des gens, ou principes de la loi naturelle appliquês à la conduite et aux affaires des nations et des souverains* (2 vols. 4to., Neufchâtel, 1758), on which he was engaged for 10 years. This work has had an extensive though not wholly a merited reputation; 12 different editions of it have been published in France, 3 in Spain, 3 or 4 in England, 1 in Germany, and 2 in the United States. It is rather theoretical than practical, and is not now regarded as high authority on international law. In 1762 Vattel published another work possessing more merit than the preceding: *Questions de droit naturel, et observations sur le traité du droit de la nature par M. le baron de Wolf* (12mo., Bern). His other works were numerous but of little importance, and are now forgotten. In 1758 Vattel was recalled to Dresden, received an appointment in the diplomatic bureau, and was soon afterward made a privy councillor. He died while visiting his native country for the benefit of his health.

VAUBAN, Sébastien Leprestre, marquis de, a French military engineer, born near Saulieu, Burgundy, May 1, 1633, died in Paris, March 13, 1707. At the age of 17 he enlisted in the army of the prince of Condé, who was then in arms against the king. Returning to his allegiance, he was made a lieutenant, received the title of engineer in 1655, and during the war against Spain in Flanders successfully conducted the sieges of several strongholds. On the conclusion of peace in 1659 he was employed in improving or constructing fortresses, in which he displayed remarkable skill and originality. In 1667 he was wounded at the siege of Douay. During the war against Holland, he distinguished himself by the taking of Maestricht (1673), and Valenciennes and Cambray (1675), by means of a new system of attack. He was promoted to the rank of brigadier-general in 1674, and of commissary-general of fortifications in 1677. In this capacity he was enabled to remodel old fortifications, and to construct new ones in accordance with his own principles, and devised and nearly completed that strong line of fortresses which protects the frontiers and sea coasts of France. In the war against the league of Augsburg (1688) he was actively engaged, taking a number of towns under the eye of the king, among which were Philippsburg, Mannheim, Mons, and Namur. In 1699 he was elected an honorary member of the academy of sciences, and in 1703 was promoted to the rank of marshal of France, and conducted the siege of Brisach under the duke of Burgundy. His military career may be summed up as follows: He improved 300 old fortresses and built 33 new ones, conducted 53 sieges, and took part in 140 battles. As a civil engineer, he constructed the aqueduct of Maintenon, the mole at Honfleur, and several canals in the north and east of France, beside improving the seaports of St. Valéry, Ambleteuse, Antibes, &c. He devised a new system of taxation, substituting for all kinds of taxes a single one which he styled "the royal tithe," to be paid by all, nobles and clergy as well as the common people. The book in which he presented his views displeased the king, and was condemned by the royal council in 1707. Under the title of *Mes oisivetés*, he left 12 MS. volumes, 7 of which were lost; extracts from the remaining 5 have been published (3 vols. 8vo., Paris, 1841-'3). His *Traité sur l'attaque et la défense des places*, a standard work of its kind (best ed., 2 vols. 8vo., Paris, 1829), *Projet d'une dixme royale*, and an essay *Sur l'édit de Nantes*, in which he proposed that the toleration edict of Henry IV. should be reënacted, appeared during his lifetime.

VAUCANSON, Jacques de, a French mechanician, born in Grenoble, Feb. 24, 1709, died in Paris, Nov. 21, 1782. He early manifested a strong taste for the mechanical arts, and studied mechanics and anatomy for several years with great zeal. It is chiefly to his automatons that he owes his fame. (See Automaton.) In 1740 he refused an invitation of Frederic the Great to take up his residence in Berlin. Cardinal Fleury appointed him inspector of silk manufactures, and in consequence of some improvements which he made in the machinery, he was at one time pelted with stones by the workmen of Lyons, who feared it would lessen the profits of their labor. He revenged himself by constructing an automaton ass which wove flowered silks. His valuable collection of machines and automatons he bequeathed to the queen; and as she paid no attention to the legacy, a strife arose for their possession between the intendants of commerce and the academy of sciences, of which Vaucanson was a member, and they were in consequence either destroyed or scattered.

VAUCLUSE, a S. E. department of France, formed from parts of the ancient Comtat Venaissin, Provence, and principality of Orange, bounded N. by Drôme, E. by Basses-Alpes, S. by Bouches-du-Rhône, and W. by Gard; area, 1,328 sq. m.; pop. in 1862, 268,255. The chief towns are Avignon, the capital, Carpentras, Cavaillon, Apt, and Orange. The E. part is traversed by several offsets from the Alps, the highest point being 6,570 feet above the sea; but in the W. the surface is undulating, and there are plains of considerable extent. The principal rivers are the Rhône, which flows upon the W. boundary, and its tributaries the Durance, Lez, Aigues, and Sorgue. Iron ore, coal, and potters' clay are found, and there are several mineral springs. The climate, though healthy, is variable. About half the surface is arable, but the soil is not naturally fertile. Some 70,000 acres are occupied by vineyards, which yield a strong red wine of good quality; the silkworm is extensively reared, and large numbers of cattle and sheep are fed. Silks, velvet, woollen cloths, linen, paper, iron, and perfumery are manufactured.—The name Vaucluse ("enclosed valley") is derived from the fountain of Vaucluse, the source of the river Sorgue, in a rocky cavern about 15 m. from Avignon. A village of the same name near the spot is celebrated as the residence of Petrarch.

VAUD, or Pays de Vaud (Ger. *Waadt*), a canton of Switzerland, bounded N. by the canton and lake of Neufchâtel and Freyburg, E. and S. E. by Bern and Valais, S. by Valais and the lake and canton of Geneva, and W. by France; area, 1,226 sq. m.; pop. in 1860, 213,606. The chief towns are Lausanne, the capital, Vevay, Bex, Yverdun, Moudon, and Payerne. The canton is traversed by the Jura range on the W., forming the boundary line with France; the Alps, which attain their greatest height in the S. E.; and the Jorat, which extends between the others, and toward the lake of Geneva. There are many valleys, the largest being that of Broye. The N. portion is drained by tributaries of the Rhine or of Lake Neufchâtel, and the S. portion belongs to the basin of the Rhône, its drainage flowing either to that river or to the lake of Geneva. The principal lakes within the canton are Joux, Brenet, Ter, Bret, Jaman, Rond, Nervaux, and Brettaye. The climate, though varying much in different parts, is generally healthy, the warmest part being in the neighborhood and on the E. shore of the lake of Geneva. Iron and salt mines are worked, but not extensively. The S. part of the canton is considered one of the finest regions of central Europe, but the soil in other parts is not remarkably fertile. Grain is not produced in sufficient quantity for home consumption, but fruit trees are abundant, and the vineyards are very productive. Horned cattle, horses, sheep, goats, and pigs are reared in great numbers. There are extensive tracts of forests, which contain principally ash, elm, alder, pine, chestnut, walnut, and some other trees. The manufactures are confined to a few articles for home consumption; and the principal exports are wines of good quality, fruits, walnuts, chestnuts, and filberts. The inhabitants are chiefly Protestants. The canton forms part of Suisse Romande, sometimes called Suisse Française, in consequence of Romansh dialects or *patois* being spoken by the greater part of the population, and French by the better educated.—In 1536 Vaud was conquered by the Bernese, and held till 1803, when a French army entered the country; and by Bonaparte's "Act of Mediation" it was constituted a sovereign canton of the Swiss confederation, and the act was acknowledged by the allied powers in 1815. After the French revolution of 1830, several thousand of the people of Vaud tumultuously assembled at Lausanne and compelled the council of state to convoke the assemblies of circles for the purpose of appointing deputies to frame a new constitution, which was laid before the assemblies in June of that year and accepted. The legislature is composed of one member for every 1,000 inhabitants, elected for 5 years. It meets twice a year for about a month each time, and has the appointment of the executive and judiciary. All citizens above 23 years of age, being *bourgeois* of a commune, and who are neither bankrupt, paupers, nor interdicted, are entitled to vote at elections.

VAUDEVILLE. See DRAMA, vol. vi. p. 609.

VAUDOIS. See WALDENSES.

VAUDREUIL, a S. W. co. of Lower Canada, bounded N. by the Lake of the Mountains, and S. E. by the St. Lawrence; area, 330 sq. m.; pop. in 1861, 12,282. It is drained by the De l'Isle and several smaller streams. Capital, Vaudreuil.

VAUGHAN, HENRY, a British poet, born in the parish of Llansaintfread, Brecknockshire, in 1621, died there, April 23, 1695. From the circumstance of his having been born among the Silures, or people of South Wales, he was called "the Silurist." He was educated at Jesus college, Oxford, where he was noted as a zealous loyalist, and was for a time imprisoned on account of his devotion to the royal cause. Leaving the university without a degree, he studied medicine in London, was graduated M.D., and soon after removed to his native place, where he passed the rest of his life. His first volume of poems, published while he was at Oxford, consisted chiefly of amatory verses, with a translation of the 10th satire of Juvenal (London, 1646); his next in order of composition, entitled *Olor Iscanus*, or "Swan of the Usk" (a river near his birthplace), was printed by his brother in 1651. Before this appeared, however, he had given to the world his *Silex Scintillans*, or "Sparks from the Flint" (London, 1650), which, like all his subsequent writings, was of a devotional character. Two volumes of prose, "The Mount of Olives" (1652) and *Flores Solitudinis*, and a little book called "Thalia Rediviva, the Passtimes and Diversions of a Countrey Muse" (1678), including some of his youthful pieces, embrace all the rest of his works. His poetry, which is often rough, inharmonious, and obscure, has never been popular, but it displays much originality of thought and frequent felicity of expression. His principal poems have been published in Prof. Child's edition of the British poets (16mo., Boston, 1854).

VAUGHAN, ROBERT, D.D., an English clergyman, born about 1798. He was educated for the ministry at Bristol college; some years later was minister of the Independent chapel at Kensington, and afterward professor of ancient and modern history in the London university. On the removal of the Independent college from Blackburn to Manchester, he became its president in 1842, and for 15 years also filled the chair of theology. In 1857 he resigned on account of failing health. Soon after his removal to Manchester he projected the "British Quarterly Review," of which he has been the editor from the issue of the first number in 1844 to the present time. His principal works are: "Life and Opinions of John de Wycliffe, D.D." (2 vols. 8vo., 1828), subsequently revised and published in one volume with the title "John de Wycliffe, D.D., a Monograph, with some Account of the Wycliffe MSS." (1853); "Memorials of the Stuart Dynasty" (2 vols. 8vo., 1831); "Causes of the Corruption of Christianity" (8vo., 1834); "Thoughts on the Past and Present State of Religious Parties in England" (12mo., 1838); "The Protectorate of Oliver Cromwell" (2 vols. 8vo., 1838); "History of England under the House of Stuart" (2 vols. 8vo., 1840); and various minor writings. His most ambitious work is a "History of England," of which 2 volumes have been published, extending to the reformation.

VAULABELLE, ACHILLE TENAILLE DE, a French historian, born at Châtel-Censoir, department of Yonne, in 1799. After the restoration he held for a short time an office under the prefect of his native department, but quitted it and went to Paris, where, after an attempt to revive the journal *Le nain jaune*, he was one of the founders of *Le pour et le contre*, subsequently known as *La révolution de* 1830. On the fall of Charles X. he continued his opposition to the monarchical system, without taking any active part with the extreme democrats. In 1838 he became one of the editors of the *National*. The provisional government in 1848 offered him successively the embassies to London and Berlin, but he refused them, and was chosen a representative by the department of Yonne. In the legislative body he was one of the committee on the constitution and president of the committee on public instruction. He acted generally with the moderate democrats. For a time after the retirement of Carnot he filled under Cavaignac the ministry of public instruction. He opposed the policy of

President Louis Napoleon, and on the next general election lost his seat, since which time he has taken no part in public affairs. His principal work is a *Histoire des deux restorations* (8 vols. 8vo., 1844 *et seq.*). He has also written a *Histoire de l'Égypte moderne de* 1801 *à* 1833 (2 vols. 8vo., 1835), and is understood to be now (1862) engaged on a history of the monarchy of July, the second republic, and the second empire.

VAUNKS. See Cape River.

VAUQUELIN, Louis Nicolas, a French chemist, born near Caen, Normandy, May 16, 1763, died Nov. 14, 1829. He was the son of a farmer, acquired his first taste for chemistry while servant to an apothecary at Rouen, removed to Paris in 1781, studied pharmacy, and became known to Fourcroy, who, struck with his zeal and proficiency, made him an inmate of his own house, and soon after his assistant in his philosophical researches and lectures. After being for a while chief pharmaceutist in the military hospital at Melun in 1793, he was recalled to Paris in 1794, and appointed inspector and professor of docimacy in the mining school, and then assistant professor of chemistry in the polytechnic school, and a member of the French institute. On being nominated the successor of Darcet in the chair of chemistry at the college of France, he resigned his inspectorship of mines, and became director of the school of pharmacy that had been just established by the government. On the death of Brongniart he received the professorship of chemistry in the *jardin des plantes*, and succeeded his master Fourcroy in the same capacity in the faculty of medicine. He had remarkable talents for analysis; his discoveries, among which those of chromium and glucina deserve special notice, have been useful in various branches of art and science. His *Manuel de l'essayeur* (8vo., 1812) has been superseded by more recent works on the subject; but his *Mémoires*, amounting to more than 250 in number, and printed in the *Annales de chimie*, the *Journal des mines*, the *Annales du muséum*, and the *Recueil de l'académie des sciences*, are still valuable.

VAUVENARGUES, Luc de Clapiers, marquis of, a French philosopher and author, born in Aix, Provence, Aug. 6, 1715, died in Paris, May 28, 1747. He entered the army in his youth, served in Italy (1734) and Germany (1741), and after the disastrous retreat from Prague, his health being ruined, retired from the service with the rank of captain. He was a friend and correspondent of Voltaire, and on intimate terms with most of the philosophers of the age, without sharing all their opinions. His principal works are: *Introduction à la connaissance de l'esprit humain* (1746), *Réflexions sur divers auteurs*, *Maximes*, *Pensées*, &c. The most complete edition of his writings is that of Gilbert (2 vols. 8vo., Paris, 1857).

VEDA, the scriptures of the Brahminic religion, the sacred literature of the Hindoos. The word means literally "knowledge," the Veda being considered as the fount and the sum of all that is worth knowing. It both designates collectively the whole literature, and is specifically applied to the four collections of poetical material which constitute the nucleus and most ancient portion of that literature, viz., the Rig-Veda, Sama-Veda, Yajur-Veda, and Atharva-Veda. These together receive in the Hindoo classification the name of *mantra*, the immediately religious or devotional part, as distinguished from the *brahmana*, the ceremonial and theologico-philosophical part. The Atharva-Veda is often excluded from the number of the Vedas, and nowhere enjoys the same consideration with the others, as being of later date and lower character.—The Rig-Veda is the most extensive and important of the four. It is entirely made up of religious lyrics, devotional hymns, somewhat over 1,000 in number, and containing more than 10,000 double verses. They are arranged in 10 books, chiefly according to their reputed authorship, or rather medium of revelation; but the 10th is a kind of apocrypha, and akin in character with the Atharvan. The hymns are ascriptions of praise and prayers for blessings, addressed to the gods of the Vedic worship, who are very different from those of the later Hindoo religions. They are the earliest poetical utterances of the Hindoo people, produced when they were but just across the border of India, in and near the Punjaub, and had not yet taken possession of Hindostan proper; and they illustrate the very beginnings of Hindoo civilization, religion, and polity. Their period it is impossible to fix with any precision; it must probably have been rather in the earlier than the later portion of the second thousand years B. C. Their language is an earlier dialect of the classical Sanscrit, differing from it very slightly in phonetical character, more notably in grammatical, and most of all in lexical. Their metrical form is prevailingly iambic, and the verse is simple, and even somewhat loose, in construction. Their style is rather monotonous; they lack the interest of a varied and fanciful mythology; and their absolute poetic value is not very high. The collection is clearly a historical one, a systematic assemblage and record of those sacred songs which the nation had brought from its earliest seats in India as its most precious intellectual possession, and had long handed down by oral tradition. The time of collection is very uncertain, but was undoubtedly several centuries B. C. The Sama-Veda is a liturgical collection, an assemblage of those passages of the sacred lyrics, single verses and longer extracts, which were employed in certain ceremonies and chanted by the priests. It has but about one sixth the contents of the Rig-Veda, and most of its material is identical with that presented by the latter. The Yajur-Veda is a yet more distinctly liturgical work; it is made up of the utterances of the priests during the performance of the principal ceremonies of the Hindoo religion; in part derived from the same mass of poetical material which composes the other two; in part, also, presenting explanations, exclamations, prayers and imprecations, &c., of other origin, in prose or in verse. Its bulk is somewhat greater than that of the Sama-Veda. Several versions of it are handed down; their chief classification is into texts of the Black and of the White Yajur-Veda. It, and the works which belong to it, are especially valuable as bearing upon the Hindoo sacrifices and ceremonies. The Atharva-Veda is a historical collection, like the Rig-Veda, but of matter mainly of a decidedly later date, and of a different character. Its songs are rather of a superstitious than of a devotional nature; it is full of imprecations, incantations, and the like. It is arranged according to the length of its hymns, is in small part in prose, and a sixth of its poetical portion is also to be found in the Rig-Veda, chiefly in its 10th book.—The orthodox Hindoo regards the Vedas with the most intense reverence, as the inspired word of God, as existing from eternity, and as the foundation of every thing in religion, philosophy, art, science, and literature; and it is in fact not easy to overstate their importance in the development of the beliefs and institutions of India, although their direct relation to and accordance with the latter is far from being what the Hindoo assumes. The religious and social constitution of more modern India is to be found in the Vedas only in its undeveloped germs. The Vedic religion is a nature worship, of a purer and simpler kind than is found so amply recorded anywhere else in the world; it is founded upon the earliest religious ideas and myths of the Indo-European race, and is so little altered from them that it sheds most important light upon the mythologies of the other branches of the race. The divinities of the later Hindoo triad are unknown to the Vedas, and of the doctrine of transmigration they contain not the slightest trace. The social and political conditions reflected in them are equally primitive. The ancient people of India is a congeries of independent tribes, half nomadic and half agricultural, pushing forward and taking possession of the country, fighting with one another and with the aborigines, struggling for wealth in cattle and lands, asking of their gods riches, numerous posterity, power, and long life, and hoping for a happy immortality with the gods beyond the grave. There is as yet no caste; the only distinction is between the Aryan immigrant and the Soodra native; each householder is his own priest, and his own right hand defends his flocks and the fruits of his culture of the earth. It is this primitive and as yet not distinctively Hindoo condition of things represented by the Vedas which lends them a great part of their value and interest; they are documents illustrating hardly less the earliest antiquity of the Indo-European race than that of the branch of it which entered India. As regards India itself, their absolute necessity to an intelligent understanding of the history of that country is palpable. They have exerted a powerful and fundamental influence upon the course of Indian history. Their possession and use in the rites of worship led to the growth into power of the Brahminic priesthood, and the accompanying separation of the people into castes, the distinguishing characteristic of the Brahminic polity; the Brahmin schools formed for the preservation and study of the Vedic texts were the nurseries of the philosophy, science, and literature of India. An immense religious literature also grew up and clustered immediately about the Vedas themselves, and the earliest portions of it are counted as being also of supernatural origin, and constitute a second division of the Veda, the *brahmana.* The *brahmana* is mainly in prose, and in a later form of the language than the poetical collections, the *mantra.* It grew up among the Brahmin schools of Vedic study, and is the expression of a very different spirit from that which found vent in the earlier lyrics; in it, the larger part of the distance which separates the modern Hindoo period from the Vedic is already passed over; in place of simplicity and the natural expression of religious feeling, we have here artificiality, mysticism, affectation, often pushed even to the verge of the meaningless and absurd. The *brahmana* literature is composed of certain works called *Brahmanas*, attaching themselves to one or other of the different Vedic texts, exceedingly prolix and of heterogeneous contents, exegesis, disquisition, precepts, ceremonial, etymology, mystical philosophy, and so on; of the *Aranyakas* or "forest treatises," later appendixes to the *Brahmanas*, and intended for the reading of those who had retired to the forest to spend the remainder of their lives in solitary asceticism; and finally of the *Upanishads*, "sittings at the feet of a teacher," little theologico-philosophical treatises of very various date, origin, and doctrine, some of them as old as the *Brahmanas*, and others very much later. To the modern Hindoo, the *Upanishads* are the most important part of the whole Vedic literature; they almost alone are industriously read, studied, and appealed to as authorities, since the other texts lie too remote from the course of modern thought to be easily brought into relations with it; in them the systems of philosophy seek their foundation; they teach no distinct scheme of religious or philosophical truth, but their dark and ambiguous utterances are pressed into the service of all the schools.—This closes the canon; what remains of the Vedic literature does not claim the character of sacred, but is composed of works subordinate and auxiliary to the inspired texts. They are arranged by the Hindoo tradition under 6 heads, viz.: pronunciation, metre, grammar, exposition, astronomy, and ceremonial; and these 6 are called the *Vedangas*, "limbs of the Veda," and are later regarded as represented by certain distinct treatises; while originally they were rather subjects, receiving elucidation from whatever source, as from the *Brahmanas* themselves and from other works or classes of works of mixed character. A more convenient division for us is into 3 departments: that which concerns the tradition of the texts, their due preservation and right utterance; that which deals with their interpretation; and that which teaches their use and application. To the first department belong the *anukramanis*, lists of the hymns, with notice of their length, and of the author, metre, and divinity of each verse, and the *pratisakhyas*, which teach a system of theoretical phonetics and its application to the proper pronunciation of the hymns, and which note all their anomalies and peculiarities of form in a way that makes them a valuable and efficient control upon their readings. With these are to be mentioned the different methods of writing the texts themselves, most ingeniously contrived to secure them against changes and to preserve their purity. The consequence of all these appliances is that the Vedic texts are handed down to us with almost perfect exactness, as originally established by the schools, with hardly a corrupt passage or doubtful reading; a phenomenon scarcely to be paralleled elsewhere in the history of literature. Of the second department, works treating of the use and meaning of words and of the interpretation of the texts, there is but little specially Vedic and of ancient date; the general grammars and lexicons of the language, with the *Nirukta* of Yaska, a summary exposition of certain parts and passages in the Rig-Veda, are all we have of earlier date than the 13th or 14th century after Christ, the era of the commentaries. These are elaborate and voluminous works, which gather in to themselves the results of all the different departments of Vedic exposition, and accompany all the principal texts, *mantra* and *brahmana;* but their interpretation of the former especially is very untrustworthy, and for our understanding of the hymns we must rely much more upon an independent and penetrating study of them, as illustrated by one another and by Indian and Indo-European language and archæology. The third department, ceremonial, is most fully represented of all, containing a great mass of works, chiefly the so called *sutras*, treating in detail of the great public ceremonies, of the private and domestic religious rites, and of the moral, social, and political duties of men. Out of works which deal with the latter subject have arisen the more modern law books, as that of Manu, &c. Astronomy comes in as an assistant in this department, so far as concerns the regulation of the calendar, and the fixing of the times of sacrifice.—The four hymn texts of the Vedas have all been published or are in process of publication. Of the Rig-Veda, Langlois has published (Paris, 1848–'51) a very poor French translation; Wilson's (London, 1850–'57; incomplete, but to be continued) is better, but represents the commentators rather than the hymns themselves. A German translation of the Sama-Veda accompanies Benfey's edition (Leipsic, 1848). Of the *brahmana* and *sutra* literature only small portions are published. The most important Upanishads, with commentary and translation, have appeared in the *Bibliotheca Indica* at Calcutta. For the Vedas in general, see Colebrooke's essay in the "Asiatic Researches," vol. viii., and in his collected essays; Roth, *Zur Literatur und Geschichte des Weda* (Stuttgart, 1846); "Journal of the American Oriental Society," vols. iii. and iv.; Weber, *Indische Literaturgeschichte* (Berlin, 1852); and Max Müller, "History of Ancient Sanscrit Literature" (London, 1859).

VEGA, Garcilasso de la. See Garcilasso de la Vega.

VEGA, Georg von, baron, a German mathematician, born at Sagoritza, a village of Carniola, Austria, in 1754, killed in Sept. 1802. He was the son of poor parents, whose name Veha he exchanged for Vega, studied at the lyceum of Laybach, and on the close of his studies was appointed an "engineer of navigation." Having distinguished himself as an author, he was made military professor of mathematics in the Austrian artillery, rising by degrees to the rank of lieutenant-colonel, and partaking in several campaigns against the Turks and French. In 1800 he was created a baron, and shortly before his death a member of the provincial assembly of nobles in his native country. On Sept. 26, 1802, his body was found in the Danube, and many years later it was discovered that he had been thrown into that river, while walking on its bank, by a miller.

VEGA, Lope de (Lope Felix de Vega Carpio), a Spanish dramatist and miscellaneous author, born in Madrid, Nov. 25, 1562, died there, Aug. 26, 1635. He early manifested extraordinary ability, and it is said that when 5 years old he could read Latin as well as Spanish, and that before he could write he would share his meals with his more advanced schoolfellows in order to get them to take down the verses he dictated. His father died while he was still young, and the family was scattered. Lope was sent to the imperial college at Madrid, where he made great progress in ethics, the belles-lettres, and the accomplishments of the time; but at the age of 14, under the influence of a sudden pique, he ran away from school with a companion, and travelled as far north as Astorga. An actual acquaintance with the privations of the world soon drove away all desire of seeing more of it, and the two truants, having been arrested at Segovia as suspicious characters, were sent back to Madrid to their friends. At the age of 15, as he tells us himself, he was serving in Terceira as a soldier against the Portuguese; but a little later, having come into the favor of Geronimo Manrique, bishop of Avila, he was sent by that prelate probably to the university of Alcala, where he remained several years, and took his degree. Here, he says in one of his epistles: "I was on the point of becoming a priest; but I fell blindly in love, God forgive it; I am married now, and he that is so ill off fears nothing." After the termination of this love affair, in which his conduct does not appear to have been much to his credit, he went from Alcala to Madrid, and attached himself to the duke of Alva, grandson of the favorite of Philip II., and became his confidential secretary; and it was at his suggestion that he wrote the pastoral romance of "Arcadia," first published in 1598. At the time of the composition of this work, he was married to Isabella de Urbina. Soon afterward he had a quarrel with a nobleman, and in consequence of a lampoon became engaged in a duel, in which he wounded his adversary. For this and for some youthful follies he was thrown into prison, which his friend Claudio Conde shared with him. As soon as he was released he chose Valencia as the place of his exile, and in that city, next to Madrid in literary reputation, remained several years, until it was safe for him to return to the capital. Within a year after coming back to his home, his wife, to whom he was tenderly attached, died; and having been unsuccessful in paying court to another lady, who is called Filis in his writings, he shared in the universal enthusiasm of 1588, and joined the invincible armada at Lisbon, upon which, he says, he used up for wadding the verses he had written in his lady's praise. He was with the expedition from its vainglorious beginning to its disastrous end, and came back with the remnant of the fleet to Cadiz, and afterward went to Toledo and Madrid, which last place he reached about 1590. During this stormy adventure he wrote most of his poem entitled *La hermosura de Angelica*, first published in 1602, which he designed as a continuation of Ariosto. Resuming his old manner of life, he now became secretary successively of the marquis of Malpica and of the marquis of Sarria, and while in the service of the latter was married in 1597 to Doña Juana de Guardio, with whom he spent a few years happily. A son, named Carlos, to whom he was strongly attached, died in his 7th year; and this loss was soon followed by that of his wife. These afflictions seem to have had a saddening influence upon Lope's life, and not long afterward he turned his attention to religious subjects, became a member of a secular religious congregation, and in 1609 entered the priesthood at Toledo. The popularity of Lope had been founded in great measure on the poem in 10 books of "Isidro the Ploughman" (1599), the patron saint of Madrid, whose relics had been carried in procession to the relief of Philip III., lying ill at a village in the vicinity, and it was believed had done his majesty a vast deal of good. But he was now becoming widely known by his contributions to the drama, to which, especially after his ordination to the priesthood, he devoted so much time that little opportunity was left him for other literary pursuits. In 1602, in the same volume with his *Hermosura de Angelica*, appeared a poem called *La Dragontea*, which consisted of 10 cantos in octave verse, devoted to an attack upon "that Protestant Scotch pirate," Sir Francis Drake, who for many years had kept the possessions of Spain both in the new and the old world in a constant state of alarm. In 1604 he published a prose romance entitled *Peregrino en su patria*, which is one of the earliest and best specimens of its kind in Spanish literature. In 1609 appeared another epic entitled *Jerusalen conquistada*, an unsuccessful imitation of Tasso's "Jerusalem Delivered," on the title page of which he announces himself for the first time as a familiar of the holy inquisition. He now also began the composition of religious poems, in which however much that is trifling and almost profane is mingled with what is sublime and devotional. In 1612 he published a pastoral in prose and verse entitled "The Shepherds of Bethlehem," and about this period some religious poems and prose meditations of a similar character, purporting to be from the Latin of Gabriel Padecopeo, an anagram of his own name. They were followed by other sacred poems and religious discourses, which, though of an ascetic character, gained great popularity. In June, 1608, he had received a prize at a poetical contest held at Toledo; and in 1620, at the jubilee held at Madrid on occasion of the beatification of San Isidro, he gained a gratifying success by the poems he recited, and his amusing verses introduced as a relief to the more serious portions of the performance, although it is not stated who were the competitors that carried off the prizes. Two years afterward, on the jubilee which followed the formal canonization of San Isidro, a poetical contest was again held, and Lope took the chief prizes. Between these two periods he published a volume, which contained the poems of *Filomena*, *La Tapada*, and *Andromeda*, and, beside some smaller productions, a prose tale, "The Fortunes of Diana." In 1624 this was followed by another volume containing "Circe," "The Morning of St. John," prose and poetical epistles, and three additional prose tales, which, with the one previously mentioned, are all the works of that character which he ever published. In 1625 appeared his sacred poem of "Divine Triumphs," with some minor pieces, and in 1627 his *Corona tragica*, a poem of epic size and dulness on the life of Mary, queen of Scots, who is represented as a martyr, while Elizabeth is called an Athaliah and a Jezebel. It was dedicated to Pope Urban VIII., who in return sent the poet a complimentary letter, conferred upon him the degree of doctor of divinity and the cross of the order of St. John, and made him fiscal in the apostolic chamber and notary of the Roman archives. Two other considerable works of his were "The Laurel of Apollo," a poem (1630), and a prose romance in dialogue called *Dorotea* (1632), which he says is "the most beloved of his works." It was written principally during his youth, and in his older years was revised and received numerous additions.—It was however by his contributions to the drama that Lope gained that marvellous popularity which eclipsed that of any other author of his time. He seems to have begun his theatrical career at Valencia during his exile from Madrid, but at Madrid he laid the foundations of a fame which enabled him to form the character of the Spanish national theatre, at the head of the writers for which he remained for more than 40 years without a rival. His fertility of production approached almost to the fabulous. He himself tells us that one of his plays was written and acted in 5 days, and his biographer Montalvan states that he composed at Toledo 5 full-length dramas in 15 days. In 1603 Lope mentions the titles of 341 pieces written by him; in 1609 he gives the number as 483, in 1618 as 800, in 1619 about 900, and in 1624 as 1,070. After his death his executor reckoned the number at 1,800 plays and 400 *autos;* but of this vast amount only 516 have been published. They embrace all kinds of subjects, ranging from the deepest tragedies to the broadest farces. Of these dramas, those called *comedias de capa y espada*, or dramas of the cloak and sword, were and still continue to be the most popular in Spain. The best of this class are "The Ugly Beauty," "Money makes the Man," "The Pruderies of Belisa," "The Slave of her Lover," "The Dog in the Manger," "The Madrid Steel," "St. John's Eve," "Fool for Others and Wise for Herself," and "The Reward of Speaking Well." Of the heroic or historical dramas, one called "Punishment not Revenge" is founded upon the tragical story in the history of the dukes of Ferrara which Lord Byron made the subject of the poem of "Parisina." Of the dramas founded upon the scenes and incidents of common life, the best are "The Wise Man at Home," "The Damsel Theodora," and "The Captives in Algiers." His *autos*, or plays founded upon biblical or religious events, were written partly with a design to conciliate the church, which did not look any too favorably upon the gross perversions of morality which abounded in the secular dramas; and in his eclogues, a kind of drama, the pastoral and religious elements are singularly blended. The reputation of Lope was fully as remarkable as his extraordinary facility of production. During his lifetime his plays were acted at Rome, Naples, and Milan in their original language; once certainly one of them was represented in the seraglio at Constantinople; and in Italy and France it was customary to announce a drama of his to be performed, although none had been written. His popularity was due in great measure to the sweetness of his versification, and his making every thing bend to the idea of rendering the play an object of interest. "When I am going to write a play," he says candidly, "I lock up all precepts and cast Terence and Plautus out of my study, lest they should cry out against me, as truth is wont to do even from such dumb volumes; for I write according to the art invented by those who sought the applause of the multitude, whom it is but just to humor in their folly, since it is they who pay for it." In spite of the large income received from these dramas, owing to his prodigality and liberality, he was generally in embarrassed circumstances.—As his life drew near its close, his religious feelings, which during his latter years had been growing upon him, deepened into a kind of "continued melancholy passion," which Montalvan says was then beginning to be called hypochondria. He not only fasted constantly, but at one time inflicted upon himself so cruel a penance that the walls of the room were subsequently discovered to be sprinkled with blood. The severity of these self-imposed punishments is said to have cost him his life. His funeral, which lasted for 9 days, was attended by an immense concourse of people, and the highest dignitaries of the land officiated on the occasion. Eulogies and poems were published upon the event to such an extent that those in Spanish fill a respectable volume, and those in Italian make one of nearly the same size.—There is no complete edition of Lope's works. The fullest is one published by Fr. Cerda y Rico under the title of *Coleccion de las obras sueltas, assi en prosa como en verso*, &c. (21 vols. 4to., Madrid, 1776–'9). His biography was written by Lord Holland (London, 1817), but the best account of his life and writings is in Ticknor's "History of Spanish Literature."

VEGETABLE IVORY TREE. See Palm, vol. xii. p. 703.

VEGETABLE SILK. See Pulu.

VEGETABLES. See Plant.

VEGETIUS, Flavius Renatus, a Roman author, who flourished toward the close of the 4th century. He wrote a treatise entitled *Rei Militaris Instituta*, or *Epitome Rei Militaris*, which was dedicated to the emperor Valentinian II.; and from several expressions in his writings it is inferred that he was a Christian. His work was taken from Cato the censor *De Disciplina Militari*, from Cornelius Celsus, from Frontinus, from Paternus, and from the imperial constitutions of Augustus, Trajan, and Hadrian. It is in 5 books, of which the 1st treats of the training of soldiers, the 2d of the organization of an army, the 3d of military operations in the field, the 4th of sieges and defences, and the 5th of naval warfare. The 3 earliest editions were printed somewhere between 1473 and 1478; the best edition is that of Schwebelius (4to., Nuremberg, 1767). There are French and German versions of the work, and an English one by Lieut. John Clarke (8vo., London, 1767).

VEHMIC COURTS (Ger. *Vehmgerichte* or *Femgerichte*, from *Fem*, old Ger., punishment, and *Gericht*, tribunal), secret tribunals which flourished chiefly in Westphalia during the middle ages. Their origin is wrapped in obscurity. They are not mentioned by name before the 13th century, but there are some traces of their existence in the 12th, and as some historians believe even in the 9th century. Westphalia was the home of this court, and only upon the "red earth," as its soil was called in their phraseology, could its members be initiated or its sittings be held. The tribunal was at first a protest against the arbitrary decisions of the lawless barons and nobles of the time. The emperor and the nobles of his court, and with them men of all ranks, associated themselves together as "free judges" (*Freischöffen* or *Freischöppen*) to try persons accused of crimes against person or property. They were bound by solemn oaths not to reveal the circumstances of the trial or the sentence passed on the offender if found guilty; and in order to be one of the brotherhood, the applicant must be of good reputation, and must have two sureties who were already free judges. The initiated recognized each other by signs. The courts might be summoned at any time and in any place in Westphalia, in public or private buildings, in the forests or caves, or in the open fields; but usually they were closed against all but the initiated and the accused person. The emperor, or in his absence the count or noble of highest dignity, presided, though in some instances men of common birth sat as chief judges, even when those of higher rank were present. If any uninitiated person intruded, he was immediately put to death. Before the chief judge lay the emblems of his authority, the sword and the cord. In the early history of the organization, the accused could be absolved by taking a solemn oath of purification upon the handle of the judge's sword; but when at a later period it was found that criminals did not hesitate to perjure themselves, the accuser, always a free judge, could substantiate his charge even against the oath of the accused by 3 or more witnesses. If the accused could rebut these by a number one half greater, he was still discharged; but if condemned, sentence was passed upon him, and he was forthwith hanged. If the person accused had not been arrested, he was summoned to appear by fastening upon his door or gateway the summons of the Vehmic court, enclosing in it a small coin. If he had no known or certain residence, then these written summonses were posted at the crossing of 4 roads nearest his haunts. If he failed to appear or to send a messenger, he was condemned as despising the jurisdiction of the holy Vehm, and once condemned there was little chance of his life while he remained in Germany. In the 14th and 15th centuries the free judges were more than 100,000 in number, scattered over every part of Germany. The condemnation of an offender by a Vehmic court was known to the whole brotherhood in a very short time; and if it were the father, brother, or son of one of the initiated who was condemned, he not only might not warn him of his danger, but must aid in putting him to death. Every member of the association was bound, under penalty of losing his own life, to effect the death of the man sentenced by the free judges; and when slain he was to be hanged on the nearest tree, nothing of value which he might have about him being removed, and a knife being thrust into the earth near him as an indication that his death was the result of a sentence of the Vehmic court. A power so formidable, and exercised under such obligations of secrecy, soon raised the hostility of those who feared becoming its victims, as well as of those who saw in it an engine capable of terrible oppression. In 1371 the emperor Charles IV., in an instrument known as the public peace or pact of Westphalia, stipulated for the recognition of the Vehm; but in the next century the number of its opposers greatly increased, and in 1461 an association was formed among the cities and princes of Germany and the cantons of Switzerland to resist the free judges, and to require that the trial of accused persons should take place in open day. In 1495 Maximilian I. established a new criminal code, which materially weakened the power of the Vehmic courts; and in the 16th century they were but seldom held. The last public sitting was in 1568, near Celle; but there were secret sittings of the court in the 17th and 18th centuries, and according to Kohlrausch even as late as 1811, in Münster. They ceased however to excite terror or to exert any considerable influence before the close of the 17th century.—The principal works on the Vehmic courts are: Freherus, *De Secretis Judiciis in Westphalia aliisque Germaniæ Partibus olim usitatis* (4to., Helmstedt, 1663); Diefenbach, *Dissertatio de Feimeris* (Leipsic, 1707); Kopp, *Verfassung der heimlichen Gerichte in Westphalen* (Göttingen, 1794); Hutter, *Das Vehmgericht des Mittelalters* (Leipsic, 1798); Wigand, *Das Vehmgericht Westphalens* (Hanau, 1825); and Kohlrausch, "History of Germany" (translated by J. D. Haas, New York, 1845).

VEHRLI, or Wehrli, Jakob, a Swiss educator, born in the canton of Thurgau in 1790. He is the son of a country schoolmaster, and at the age of 18 became a teacher in Fellenberg's agricultural school at Hofwyl, of which he was in fact the organizer. It remained for 26 years under his charge, and was from an early period the most prosperous of Fellenberg's institutions. As early as 1815 he had added to it a department for training teachers, and in 1827 a colony from it was established at Maykirch, under one of the older pupils. In 1833 Vehrli left Hofwyl, and took charge of the normal school for country teachers at Kruitzlingen on Lake Constance, where he still presides. Here, as at Hofwyl, he and his pupils live very plainly, laboring in the field and garden several hours every day, and performing household duties as well. The course of instruction, though not extensive, is very thorough, comprising a critical knowledge of their native language, history, and literature, arithmetic, surveying, mensuration, mechanics, natural philosophy and astronomy, music and singing, with the elements of moral and intellectual science, and pedagogy, in which they also obtain practical instruction in the adjacent village schools. All the training schools of Switzerland are organized on Vehrli's plan, and most of them are taught by his pupils, as are many others in Germany, France, and England. It was from his school at Hofwyl that Wichern derived the first idea of his famous *Rauhe Haus* at Horn, near Hamburg.

VEHSE, Karl Eduard, a German historian, born in Freiberg, Dec. 18, 1802. He was educated at Leipsic and Göttingen, and filled various positions in the Dresden state archive office, but resigned in order to accompany the separatist Stephan and his followers to America. Early in 1839 he went to Missouri, but at the end of that year returned to Europe. In 1851 he began a series of journeys in Germany, France, and England, and in 1853 took up his residence in Berlin. His chief work is the *Geschichte der Deutschen Höfe seit der Reformation* (Hamburg, 1851), which now comprises more than 40 volumes, and is still unfinished. It has already been translated into Swedish and partly into English. Of the other works of Vehse may be mentioned *Geschichte Kaiser Otto's des Grossen* (Zittau, 1828) ; *Tafeln der Welt- und Culturgeschichte* (Dresden, 1834); *Vorlesungen über Weltgeschichte* (2 vols., Dresden, 1842) ; and *Shakspeare als Politiker, Psycholog und Dichter* (2 vols., Hamburg, 1851).

VEII, one of the 12 cities of the Etruscan confederation, probably the largest and most powerful of all, situated on the Cremera, a small affluent of the Tiber. Its site has lately been ascertained in the neighborhood of Isola Farnese, about 12 m. N. N. W. from Rome, where a cemetery and other interesting remains have been discovered. Its territory seems to have extended from the mouth of the Cremera to the Ciminian forest, and from Mt. Soracte to the Tyrrhenian sea. One of the most ancient cities of Etruria, Veii was for centuries the great rival of Rome, succumbing to the latter only after very numerous wars and a siege, it is said, of 10 years. At the time of its fall (396 B. C.) it surpassed Rome in extent and splendor. It was captured and destroyed by the dictator Camillus, who soon after, Rome having in its turn been taken and destroyed by the Gauls under Brennus, by his eloquence prevented the Roman people from removing to Veii. Abandoned for 4 centuries, it was repeopled under Augustus, but not long after relapsed into decay, and eventually disappeared from history.

VEIN, in geology. See Mineral Vein.

VEINS, the name applied to four systems of blood vessels, differing in structure, course, and function, and having in common only the character of conveying blood toward and not from the heart. These systems are the common systemic, the portal, the pulmonary, and the umbilical, the first two circulating impure or venous, and the last two pure or arterial blood. As to the special anatomy of the general venous circulation, it will be sufficient to say here that all the veins from the lower limbs and the pelvic and abdominal organs carry their contents into the inferior vena cava, and those of the head, upper limbs, and thorax into the superior vena cava; that these two great vessels pour their blood into the right auricle of the heart, whence it enters the right ventricle, to be sent by this through the pulmonary artery to the lungs for purification, returning arterial by the pulmonary veins to the left auricle, and thence by the left ventricle and aorta over the body.—The principal superficial vein of the side of the neck is the external jugular, in which venesection is occasionally performed; it is very conspicuous in some persons during violent agitation of body or mind. The deep-seated internal jugular, by the side of the carotid artery, receives the blood from the sinuses of the brain; the median basilic at the bend of the elbow is the classical one for venesection, being very accessible and of considerable size; the longest vein in the body is the internal saphena, extending from below the ankle joint to within about an inch of the groin; the other veins as to their course generally follow the arteries; the heart has its own system of veins, not communicating with the venæ cavæ, but opening directly into the right auricle. These systemic veins, as they are called, correspond to the branches of the aorta, and grow larger and larger toward the heart. The portal veins collect the blood from the small vessels of the abdominal viscera into one, the vena portæ, which subdivides like an artery within the liver. In the pulmonary circulation, by a contradiction in terms, the vessel called the artery carries venous blood, and the veins arterial blood.—Veins are generally thinner, less elastic, and of larger caliber than the corresponding arteries, and are provided with membranous folds or valves to prevent a backward flow of the blood. In vertebrates generally they consist of an external fibrous and areolar coat, a middle or muscular, and an internal fibrous lined with fenestrated or striated membrane and epithelium. Venous capillaries do not essentially differ from arterial, consisting of tubes of homogeneous membrane, with a few oval nuclei; the veins of the brain have no muscular coat; at their junction with the heart they are more muscular, thicker, and red, from a prolongation into their structure of the muscle of the auricle, and they have also a partial investment of the serous layer of the pericardium; where the vena cava pierces the diaphragm it has a covering of fibrous tissue; the cerebral veins or sinuses are tubular excavations in the substance of the dura mater, lined with the usual internal membrane; the umbilical vein is smooth, without valves, lined with epithelium, and composed of a thick fibrous mass. Veins have their nutrient vessels, and a very few nerves. The venous system is far more extensive than the arterial, both in the size and number of the vessels and their branches; except in the viscera, there are two sets, one superficial and subcutaneous, the other deep-seated, accompanying the arteries, and often double; they almost always originate by the union of the capillaries, increasing in size and diminishing in number toward the heart (see CAPILLARIES); the veins which return the blood from some of the erectile tissues seem to commence, according to Valentin and Müller, in little sacs, into which arteries much larger than capillaries open; in the wings of the bat, according to Paget, arteries of considerable size pass at once into veins without intermediate capillaries. Veins intercommunicate very freely, forming networks and plexuses, the most remarkable of which in man are those about and within the spinal canal; they occur even within the spongy bodies of the vertebræ.—The valves in veins are interesting not only as specimens of animal mechanics, but as having in a great degree suggested to Harvey the discovery of the circulation of the blood; these are raised portions or pockets of fibrous membrane lined with epithelium, very delicate, and in the most perfect semilunar shape; there are generally 2 together in the larger vessels, opening toward the heart, and when in contact completely preventing the regurgitation of the blood; at the orifices of the smaller veins they are often single, and in the great vessels of the larger mammals frequently 3; there are none in the capillaries, though they exist in veins of half a line in diameter; they vary from a mere linear elevation to a deep pocket. Their situation is irregular, and their number not very great; in man they are found in veins subject to muscular pressure, and are therefore most numerous in the limbs; in the head and neck there are but 2, in the external jugular, and these not very perfect; in the arm they are most numerous at the upper part, with none in the subclavian, innominata, and superior cava; in the legs they are most abundant at the lower part; there are none in the spinal veins, in those of the portal and hepatic systems, in the heart, kidneys, uterus, and lungs, as a general rule; they are few in cetaceans and birds, and almost absent in reptiles and fishes.—Veins are passive organs, determining by the contraction of the muscles the course of the blood; they are also reservoirs for the circulating fluid, and active agents in absorption; as reservoirs, though very important in man, they are most remarkable in the lower animals, as in seals, whales, and many diving birds.—Veins are more subject to diffuse inflammation than arteries, and, from their active absorbent powers, morbid materials are carried rapidly and widely over the system from the heart. Hæmorrhoids and varicose veins have been known since the time of Hippocrates. Phlebitis, or inflammation of their lining membrane, is a dangerous and common disease, sometimes leading to fatal purulent absorption, and frequently to obliteration of the vessel. Varix or dilatation of a vein, from the comparatively small amount of circular fibres, is one of the most frequent of the morbid conditions of the body; it is produced by a mechanical exciting cause acting on a weakened vessel; it is most common in the legs, and in the internal saphena vein, in persons obliged to be much on their feet; when in the rectum, the disease is called hæmorrhoids or piles, when in the spermatic cord, varicocele. Small earthy concretions are not unfrequently deposited in the walls of veins from the blood; they are named phlebolithes or vein stones, and consist chiefly of phosphate and carbonate of lime. Entozoa are often found in the interior of the veins in the lower animals. A vein if wounded, either accidentally or in venesection, heals readily, without interference with its functions; a wound in the axillary, subclavian, or lower part of the internal jugular, during a surgical operation, may prove suddenly fatal from the sucking in of air and a consequent instantaneous paralysis of the heart's action. A ligature throws the coats of a vein into longitudinal folds, and divides the outer and part of the middle coat, obliteration being produced by the deposit of lymph in the surrounding areolar tissue. (See CIRCULATION, and PULSE.)

VEIT, PHILIPP, a German painter, born in Berlin, Feb. 13, 1793, died in Rome in Feb. 1854. By his mother he was a grandson of the philosopher Mendelssohn. After a preparatory education at Dresden, he repaired in 1815 to Rome, and became associated with Cornelius, Overbeck, and other German painters in their remarkable effort to infuse into the art of the 19th century the spirit which animated the mediæval masters. In conjunction with the leaders of the new school, he was employed to decorate the villa of the Prussian consul, J. S. Bartholdy, with frescoes illustrating the history of Joseph; and the "Seven Years of Plenty," executed by him as a companion piece to Overbeck's "Seven Years of Famine," established his reputation. He thenceforth attached himself to the party which under the lead of Overbeck adopted the symbolical and ascetic method of treating religious subjects; and under the influence of his studies, as also of the example of his stepfather, Friedrich von Schlegel, he abjured Protestantism and entered the Roman Catholic church. In 1826 he was appointed director of the Städel art institute at Frankfort-on-the-Main, which position he filled for many years with great reputation, producing a series of works in oil and fresco, which are among the most characteristic productions of modern German art. His masterpiece is a large fresco in the institute representing "Christianity bringing the Fine Arts into Germany," with allegorical figures of Italy and Germany at the sides. His religious feelings acquired strength with time; and such was his dislike of the new realistic and romantic school headed by Lessing, that upon the purchase in 1843 of that master's "Huss before the Council of Constance" for the institute, he resigned his office, and transferred his studio to Sachsenhausen in Hesse-Cassel. Among his subsequent productions are an "Assumption of the Virgin" for the Frankfort cathedral, and "The Marys at the Sepulchre," "The Parable of the Good Samaritan," and "The Egyptian Darkness," for the king of Prussia.

VELASQUEZ, Diego Rodriguez de Silva y, a Spanish painter, born in Seville in 1599, died in Madrid, Aug. 9, 1660. He was of Portuguese origin on the father's side, and while a child was placed in the school of the elder Herrera, a harsh and rough master, whose style, full of coarse power and originality, was not unlike his character. Disgusted by Herrera's brutality, he entered the school of Francisco Pacheco, from whom he learned little beside formal academic rules and the code of the inquisition for the guidance of painters, in which Pacheco was thoroughly informed. At the end of 5 years he married his master's daughter Juana, the father's consent being won by his pupil's "virtue, his purity, and his good parts, as well as by the hopes derived from his great natural genius." Velasquez, whose style, under the influence of Herrera's instructions, had assumed a decided naturalistic character, immediately entered upon a course of self-instruction, taking nature only for his guide, and following her faithfully to the end. His chief model was a peasant boy, whom he painted in his native rags in every variety of expression and attitude; and he also acquired great facility in the representation of fruit, fish, and other common objects of still life, classed under the generic name of *bodegones*. His works of this period are apparently imitations of Caravaggio and Spagnoletto, and exhibit great breadth and force of truth, with no attempt at ideal or poetical expression. A well known specimen is that called "The Water Carrier" in the collection at Apsley house. At 23 years of age Velasquez visited Madrid, where he received a warm welcome from his townsman Don Juan Fonseca, through whose instrumentality he was employed in 1623 to paint the portrait of the count duke of Olivarez, the chief favorite of Philip IV. and the actual ruler of Spain. The king himself was his next sitter, and the picture, upon which the artist had expended all his power, was exhibited on the steps of the church of San Felipe, and viewed with wonder and delight by the populace. Velasquez was immediately appointed court painter, with a regular salary in addition to the payments for his works, and is said to have received the exclusive privilege of portraying the king on canvas. In 1623 he also made a sketch, since lost, of Charles I. of England, who was then in Madrid on his romantic expedition of wooing the infanta. A picture has recently been exhibited in England and the United States, which is asserted to be identical with this. In 1627 he further increased his reputation by a picture of the "Expulsion of the Moriscos from Spain," which gained him the appointment of usher of the chamber, with a salary and allowance; and in the succeeding year he enjoyed for several months the society of Rubens, then on a diplomatic visit to Spain, with whom he visited the Escurial. The intercourse between the two artists was however productive of no change in the style of Velasquez, and this may be generally said of his visit in 1629 to Italy, where he remained until 1631. At Venice, Rome, and elsewhere, he was received with flattering marks of attention, and studied diligently the works of Raphael, Michel Angelo, and the great Italian masters, but without losing a particle of his individuality. "Velasquez," says Mr. Ford, "like his friend Lope de Vega, held up the mirror to his own age alone; he called up no recollections of the past, borrowed from no other period or country, and none can claim any thing back from him; all was his own, original, national, and idiosyncratic; and he shrunk from any change by which loss might be risked." The two works which he sent home from Rome, "Jacob with the Garment of Joseph" and "Apollo at the Forge of Vulcan," exhibit no trace of his studies in the Vatican or of the influence of the antique, to which he is known to have given much attention. At Naples he lived in close intimacy with his countryman Spagnoletto. Returning to Spain, he was received with renewed expressions of favor by Philip, who gave him a painting room in the palace, and soon after sat to him for a celebrated equestrian portrait, from which was executed in the first place a model in wood by the carver Montañez, and subsequently a bronze statue by Pedro Tacca, now in the gardens of Buen Retiro in Madrid. It was for this portrait, Pacheco informs us, that the king condescended on one occasion to sit for 3 hours continuously. In 1648–'50 he made a second journey to Italy for the purpose of collecting pictures and statuary for the king, and while in Rome painted a famous portrait of Innocent X., the only real specimen of his art now in that city. Subsequent to his return to Madrid he produced some of his finest works, including the celebrated *Meninas* (maids of honor), which represents the artist painting the portrait of the infanta Margarita surrounded by her attendants. Luca Giordano called this picture the "theology of painting," meaning that it was the noblest production of the art; and in respect to aërial and linear perspective, local color, and animal and human life, it is held to be almost unrivalled. Philip was so well pleased with it, that immediately upon its completion he painted with his own hands the cross of Santiago upon the breast of the figure of Velasquez. Honors gradually accumulated upon the painter, who in 1652 received the much coveted court place of *aposantador mayor*, the duties of which, however, required him to be so constantly in attendance on the king, that many precious hours were taken from the practice of his art. In the spring of 1660 he left Madrid to superintend the progress of the royal family to the Isle of Pheasants, on the frontiers of France; and while fitting up the saloon in which were held the conferences terminating in the marriage of the infanta Maria Theresa with Louis XIV., he was seized with a tertian fever, of which he died after a few weeks' illness, having passed through life with unvarying prosperity, and leaving a reputation for amiability and integrity not less remarkable than his artistic renown.—Owing to the fact that Velasquez painted almost exclusively for the king, and that his pictures being royal property were generally respected by Bonaparte's generals, he is still to be seen to proper advantage only in Madrid. In other parts of the world, and it may be said also of Spain, his works are comparatively rare. The royal gallery at Madrid contains 62 splendid and characteristic specimens of his genius, comprising portraits, history, *genre*, and landscape, in all of which he was equally great, although as a painter of men, and particularly of the old grandees of the Spanish court, he gained most distinction, having, in the opinion of competent critics, elevated that branch of art to the dignity of history. His portraits are also the most numerous of his works, admirable examples being the several equestrian portraits of Philip IV. In delineations of female beauty, and in subjects demanding an elevated ideal or poetical treatment, he was less successful; and his pictures of this class, although powerfully painted, are inferior to those of his great countryman Murillo. A "Crucifixion" by him in the royal gallery, one of the few sacred subjects which he painted, is cited by Mr. Stirling for the wonderful expression of agony depicted in the face of Christ. Of his skill in history and *genre* it will suffice to mention two examples, "The Surrender of Breda by Justin of Nassau to Spinola," called also *Las lanzas* ("The Lances"), remarkable for the feeling and expression of the figures and the technical execution; and the celebrated group entitled *Los bebedores* ("The Drinkers"), which, according to Ford, combines the humor of Teniers with the breadth and effect of Caravaggio, and which for its humor alone Mr. Stirling thinks entitles Velasquez to the name of the "Spanish Hogarth." It is worthy of remark that in neither of these pictures are there any representations of women. His Virgin is not the beatified woman of Raphael or Correggio, but a real being of flesh and blood, conceived from a lower ideal, and having in her more of earth than of heaven. His pictures of this class, however, if few in number, are of a more cheerful character than those of most Spanish artists, whose efforts were hampered by the rigid rules of the inquisition. His coloring is subdued and even cold in comparison with the glowing tints of Titian or Rubens, but "his mastery over his materials, his representation of texture, air, and individual identity, are absolutely startling; his lineal and aërial perspective is magnificent." The life and genius of Velasquez have been treated by three of the most accomplished modern writers on art. See Stirling's "Annals of the Artists of Spain" (1848), and "Life of Velasquez" (1855); Ford's "Handbook of Spain;" and Sir Edmund Head's "Handbook of Spanish Art."

VELDE, Franz Karl van der, a German novelist, born in Breslau, Sept. 27, 1779, died there, April 6, 1824. He studied law at Frankfort-on-the-Oder, and afterward held various judicial offices at Breslau, Winzig, and Zobten. He wrote poems, plays, and novels, by the last of which he gained considerable reputation and popularity, and even the unmerited appellation of "the German Walter Scott." Among his novels are: *Guido*, *Die Eroberung von Mexico* ("The Conquest of Mexico"), *Die Malteser* ("The Maltese"), *Die Wiedertäufer* ("The Anabaptists"), *Arwed Gyllenstierna*, and *Christine und ihr Hof* ("Christina and her Court").

VELDEKE, Heinrich von, one of the earliest of the German minnesingers, and the reputed originator of the heroic minstrel song in Germany, flourished toward the close of the 12th century. Little is known of his life. He was a Westphalian by birth, but followed a countess of Cleves to the court of her husband, Louis of Thuringia, transplanting to that country the Rhenish minstrelsy, of which soon after Eisenach, with the castle of Wartburg, became the renowned centre. His principal work is the epic *Eneit*, written after a French original, and now extant only in an altered style and form.

VELLEIUS PATERCULUS. See Paterculus.

VELLORE, a town of British India, presidency of Madras, N. district of Arcot, situated on the S. side of the river Palar, in lat. 12° 55′ N., long. 79° 11′ E., 79 m. W. S. W. from Madras, and 16 m. W. from Arcot; pop. in 1857, 51,500. It is tolerably clean and well built, a place of considerable trade, and a station on the Madras and W. coast railroad. About a mile N. from the town there is an extensive fortress. Inside the fort there is a very fine Hindoo pagoda, built about 4 centuries ago. The climate is intensely hot, but healthy.—Vellore was founded by the rajah of Beejanuggur in the latter part of the 14th century. Sevajee took it from his descendants in 1677; and it fell into the hands of the British when they obtained possession of the Carnatic. Upon the fall of Seringapatam it was selected as a suitable place for the residence of the sons and family of Tippoo Sultan. Early in the morning of July 10, 1806, the sepoys rose in mutiny, and killed 13 officers and 100 men of the European garrison.

VELLUM. See Parchment.

VELOCIPEDE (Lat. *velox*, swift, and *pes*, foot), a carriage by means of which the rider propels himself along the ground. It was invented at Mannheim in 1817 by M. Drais, and as originally constructed consisted of a wooden bar about 5 feet long and 6 inches wide supported at each end upon a single wheel, that designed for the front being arranged so as to turn obliquely to the line of the carriage. The rider sat astride of the bar and propelled the machine by the action of his feet upon the ground. The vehicle never came into general use, but has been modified so as to serve as a toy for children. It is now made with two wheels behind, over which is a seat, and motion is given by the action of a crank connected with one or both of the wheels and worked by hand. The carriage is guided by turning the forward wheel in either direction.

VELOCITY. See MECHANICS, vol. xi. p. 321.

VELPEAU, ALFRED ARMAND LOUIS MARIE, a French surgeon, born at Brèche, department of Indre-et-Loire, May 18, 1795. He was brought up to assist his father, who was a farrier. Having taught himself, almost without assistance, reading, writing, and some of the rudiments of medicine, and acquired a considerable reputation among the peasantry by several fortunate cures, he was enabled by a benevolent neighbor to study in the hospital of Tours. By strict economy and the proceeds of certain prizes, he obtained money enough to support himself in the humblest way at Paris, where he was graduated in 1823. In 1830 he became surgeon to the hospital *de la pitié*, in 1832 a member of the academy of medicine, in 1835 professor of clinical surgery, and in 1842 successor of Larrey in the institute. In Aug. 1859, he was made a commander of the legion of honor. His clinical lectures at the *Charité* hospital are among the most remarkable of his claims to distinction, and 3 volumes of his *Leçons orales* have been published by his pupils MM. Jeanselme and Pavillon. He is also the author of numerous professional works, the most important of which are: *Traité de l'anatomie chirurgicale* (2 vols., 1825); *Anatomie des régions* (1825–'6; revised and republished under the title *Anatomie chirurgicale générale et topographique*, 2 vols. 8vo., 1836); *Mémoire sur les positions vicieuses du fœtus* (1830); *Recherches sur la cessation spontanée des hémorragies traumatiques primitives et la torsion des artères* (1830); *Nouveaux éléments de médecine opératoire* (1832), a work of the highest authority; and *Embryologie ou ovologie humaine* (1833).

VELVET (Lat. *vellus*, a fleece), a textile fabric woven wholly of silk or of silk and cotton mixed, having a loose pile or short shag of threads on the surface, which give to it a fine soft nap. Cotton stuffs manufactured in the same way are commonly called velveteens. (See FUSTIAN.) This manufacture appears to have been introduced about the 13th century, and was limited for a long time to the Italian cities. It thence passed into France, where it was greatly improved, and in 1685 was introduced into England by French refugees. Beside its pleasing softness, velvet possesses in a high degree the valuable quality of durability, derived from the close texture of the under side, and also from the thick nap of the upper, which opposes great resistance to external friction. It is moreover a very warm material, and a suitable fabric for rich ornamental figured work. Its peculiar character is derived from the insertion of short pieces of silk thread, secured under the shoot, weft, or cross threads, their ends standing upright and so closely together as to conceal the interlacing of the threads beneath. They are furnished in an extra set of threads, called pile threads, arranged in the loom parallel to the warp threads, and much longer than these, which in the progress of the weaving are passed, after every third throw of the shuttle, over a thin, semi-cylindrical, straight brass wire, which is laid across the whole fabric over the warp threads. The next working of the treadle carries the pile threads down over the brass, when they are covered and fastened by the next throw of the shuttle. Another wire is placed in the same position for the next row of loops across the fabric, and these are produced, as already observed, with every third throw of the shuttle. Two wires only are used, and these are freed in turns by the same process which converts the loops into a pile. Each of them has a groove along its upper surface, and on this is run a sharp-edged knife, thus severing the loops and leaving two ends of each one projecting above the fabric. These are brushed up and dressed to produce the velvety nap. If some of the pile threads are left uncut, the velvet is then of the striped kind. Fine velvets contain 40 to 50 rows of loops in an inch length of the fabric, and their production is therefore exceedingly slow and laborious. The process is moreover complicated by the use of two shuttles, a stouter thread being used after the wire than the two which succeed. Hence the production of a yard of plain velvet is considered a good day's work. —Various modifications have recently been introduced in the manufacture of velvet, among which is that of Mr. Gratrix, who produces the pile by the weft, the cut being then made in the direction of the warp. The pile threads are woven over a series of fine longitudinal knives, over the points of which the portions of the weft intended to form the pile slide successively as the cloth is woven; and the weft is severed in passing over the cutting portion of these knives, which are fixed. By some of the new methods the velvet is cut and embossed at the same time.

VENANGO, a N. W. co. of Pennsylvania, drained by the Alleghany river, French creek or Venango river, and Teonesta, Oil, Sugar, and Sandy creeks; area, 850 sq. m.; pop. in 1860, 25,044. The surface is very hilly, a large part of the county being traversed by spurs of the Alleghany mountains. The soil along the streams is fertile. The productions in 1850 were 98,189 bushels of wheat, 109,042 of Indian corn, 255,146 of oats, 319,870 lbs. of butter, 14,678 of maple sugar, and 15,663 tons of hay. There were 9 grist mills, 31 saw mills, 12 iron furnaces, 1 rolling mill and nail factory, 6 tanneries, 2 woollen factories, 2 newspaper offices, and 19 churches; and in 1860 there were 6,605 pupils attending public schools. Iron ore and bituminous coal are very abundant, and there are traces of silver mines. Lumber and oil are exported largely. This county forms the centre of the great oil basin of Pennsylvania, and there are hundreds of oil wells in the valleys. (See PETROLEUM.) Capital, Franklin.

VENDACE, the name given in Great Britain to a fish of the salmon family and genus *coregonus* (Cuv.). This fish, *C. Willughbii* (Jard.), or *C. albula* (Cuv. and Val.), is 7 to 8 inches long, delicate greenish brown above, shading into silvery below, with the lower fins bluish white; iris silvery, tinged with yellow. The mouth is very small, and without teeth except a few minute ones on the tongue; scales large; first dorsal higher than long; lower jaw the longer; the arches of the gills are furnished on the inner side with numerous long processes barbed on each side and projecting into the cavity of the mouth; those of the two sides meet and form a complete strainer, arresting the small crustaceans on which they feed until enough have been collected to be swallowed, the water at the same time flowing freely over the gills. It is found in some of the lochs of Lochmaben, Dumfriesshire, also in the lakes of Sweden, and northern and central Europe. It is highly esteemed as an article of food, having somewhat the flavor of the smelt; it will not take bait or rise to a fly, and is caught only in nets; it is in best condition about Aug. 1, when it is fat and well flavored; the food consists chiefly of minute entomostracan crustaceans, which are pursued in shoals. It is very prolific, though extensively preyed upon by the pike; it dies very soon out of water; in many places on the continent it is smoked and packed like herrings. It resembles, according to Yarrell, the gwyniad of Wales, the schelly of Cumberland, the powan of Perthshire, and the pollan of Ireland.

VENDÉE, or LA VENDÉE, a department in the W. of France, formed from the old province of Poitou, and bordering on the bay of Biscay; area, 2,595 sq. m.; pop. in 1862, 395,695. The surface is level or undulating, and marshy along the coast. The marshy district is known as *le Marais;* the woody tract in the centre of the department as *le Bocage;* and the rest of the country as *la Plaine*, a fertile district watered chiefly by the river Vendée. The only navigable streams in the department are the Autin, Vendée, Lay, Vic, Sèvre-Niortaise, and Sèvre-Nantaise. The coasts are low, and there are but two harbors, Sables d'Olonne and Saint Gilles. The chief productions are grain, wine, hemp, flax, wool, cattle, coal, and metals. The manufactures are unimportant. Capital, Napoléon-Vendée (formerly Bourbon-Vendée).—La Vendée is famous for a royalist insurrection after the proclamation of the first republic, which spread over Lower Poitou, Anjou, Lower Maine, and Brittany. The movement was semi-religious in its character, and originated with the peasantry, who in 1793, under the lead of a wagoner named Cathelineau, overpowered a small body of the republican troops, and were thus encouraged to undertake new enterprises. (See CATHELINEAU.) Gaston, a wig maker, Stofflet, a gamekeeper, Charette, a naval officer, and especially La Rochejaquelein became distinguished as leaders of the insurgents (see LA ROCHEJAQUELEIN); but they were signally defeated in Dec. 1793, and hundreds of them massacred. The ordinary forms of execution proving too slow, Carrier caused the Vendean prisoners at Nantes to be drowned in masses. In the following spring, however, the war broke out again under La Rochejaquelein, Stofflet, and Charette; and the Chouans, with whom the Vendeans were afterward united, appeared at the same time on the N. of the Loire, in the departments of Morbihan and Côtes-du-Nord. (See CHOUANS.) The convention made a peace with them in Feb. 1795, guaranteeing to them a general amnesty, freedom of religious worship, exemption from military service, and indemnification for their losses. The landing of a body of French *émigrés* at Quiberon in June, however, encouraged them to take up arms again. Gen. Hoche was sent against them, and succeeded, after Stofflet and Charette had been taken and shot (Feb. and March, 1796), in reducing the country to submission. The cruel punishments of 1793-'4 were not repeated. Insurrectionary movements also took place in Vendée in 1799 and 1800, and during the Hundred Days (1815), but assumed no very formidable proportions.—See Crétineau-Joly, *Histoire de la Vendée militaire* (12mo., 1843).

VENDÔME (anc. *Vindocinum*), a town of France, department of Loir-et-Cher, and formerly capital of the district of Vendômois, which comprised the modern departments of Loir-et-Cher and Sarthe, situated on the Loir, 39 m. W. from Orleans; pop. in 1856, 7,930. It contains the ruined chateau of the dukes of Vendôme, picturesquely situated on a commanding eminence. In the vicinity is a mansion called Bonne Aventure, where Antoine de Bourbon, father of Henry IV. of France, maintained a sort of seraglio.

VENDÔME. I. CÉSAR, duke de, a French prince, the eldest son of Henry IV. by his mistress Gabrielle d'Estrées, born in the castle of Coucy, Picardy, in June, 1594, died in Paris, Oct. 22, 1665. He was legitimated when scarcely one year old, and betrothed in 1598 to the daughter of the duke de Mercœur, who resigned to him the government of Brittany. A few years later he received the duchy of Vendôme, and was entitled to rank next to the princes of the blood. During the minority of his half brother Louis XIII., he participated in the conspiracy of Chalais against Richelieu (1626), was incarcerated at Vincennes and Amboise, and after 4 years' confinement released on condition of giving up his governorship and living abroad. At the end of a few years he was allowed to return to France, but kept under strict watch by the cardinal, who was anxious to ruin him. In 1641 he was charged with an attempt to poison Richelieu, escaped to England, and was sentenced to death by default. After the demise of Richelieu he returned home and had the sentence reversed. He was treated with great favor by Anne of Austria on her accession to the regency; but he nevertheless took an active part in the Fronde, and was disgraced. Having made his peace with the government in 1650, he was appointed governor of Burgundy and general superintendent of navigation. In 1653 he took Bordeaux from the Frondeurs, and in 1655, in the capacity of grand admiral of France, defeated the Spanish fleet off Barcelona. He left two sons, Louis and François, the latter of whom was the celebrated duke of Beaufort. (See BEAUFORT, FRANÇOIS DE VENDÔME.) II. LOUIS, duke de, known as the duke de Mercœur during his father's life, born in 1612, died in 1699. He served abroad, returned to France after Richelieu's death, and became in 1649 viceroy and commander of the French troops in Catalonia. He married in 1652 Laura Mancini, a niece of Cardinal Mazarin, was appointed governor of Provence, and placed in 1656 at the head of the French army in Lombardy. On his wife's death he became a priest, was promoted to a cardinalship, and held the office of papal legate in France. III. LOUIS JOSEPH, duke de, a French general, son of the preceding, born in Provence in 1654, died at Tinaroz, Catalonia, June 11, 1712. He was first known as the duke de Penthièvre, entered the army in 1672, distinguished himself in Alsace under Turenne and in Flanders under Crégin, was appointed major-general in 1678, and succeeded his father as governor of Provence in 1681. He was made lieutenant-general in 1688, assisted in the sieges of Mons and Namur, and won great reputation at the battles of Steinkerk, Aug. 3, 1692, under Luxembourg, and Marsaglia, Oct. 4, 1693, under Catinat. In 1695 he became "general of galleys" and chief commander of the French army in Catalonia, and besieged Barcelona, which was defended by the prince of Hesse-Darmstadt, defeated the Spanish army which attempted to relieve the city, and forced it to surrender, Aug. 10, 1697. This success contributed to bring about the peace of Ryswick. On the breaking out of the war of the Spanish succession, he was, after the capture of Marshal Villeroy in Cremona, placed in command of the French army in Italy, and stopped the progress of Prince Eugene; but he was overtaken by his opponent at Luzzara, Aug. 1702, and saved himself from a disastrous defeat only by remarkably skilful generalship and personal intrepidity. After a fruitless attempt to reach Germany through the Tyrol, he returned to Piedmont, worsted the duke of Savoy, who had played false to France, took several of his strongholds, and defeated Prince Eugene at Cassano (1705), and the imperialists in their winter quarters at Calcinato (1706). After the battle of Ramillies he was called to Flanders, to command the French army under the grandson of the king, the duke of Burgundy; hampered in his movements by those who surrounded the young prince, he could not prevent the junction of Marlborough and Eugene, failed to effect a junction with Berwick, and was defeated at Oudenarde (1708). Disgusted with the treatment he received, and feeling that he had lost the confidence of the king and was hated by Mme. de Maintenon, he retired from active service to his country seat of Anet. He did not long enjoy the pleasure of idleness, for Philip V. of Spain, deserted by his grandfather, who was now scarcely able to defend himself, asked as a last favor that Vendôme should be sent to his assistance. The old warrior repaired at once to Valladolid, gathered around him crowds of volunteers, inspired the Spaniards with new confidence in their fortune, and brought Philip back to his capital; then following up his success, he defeated and captured at Brihuega an English corps under Stanhope, and finally won at Villaviciosa, Dec. 9, 1710, a decisive victory over the imperialist general Stahremberg, which firmly established Philip on his throne. He was completing the conquest of Catalonia, when he died suddenly. His death was considered a national calamity; and by Philip's orders his remains were deposited in the royal vaults of the Escurial.

VENEDEY, JAKOB, a German writer and political reformer, born in Cologne, May 24, 1805. He was educated at Bonn and Heidelberg, and occupied himself for some years in the practice of law and in trade. A work from his pen on juries, *Ueber das Geschworenengericht* (Cologne, 1832), and his known affiliation with secret societies, led the Prussian authorities to determine to arrest him at Mannheim in 1832; but he managed to escape into France, at first to Strasbourg and afterward to Paris. He was for a time much harassed by the police; but receiving the protection of Arago, Mignet, and other members of the institute, he continued in Paris until 1848, when he returned to Germany. He was a member of the preparatory parliament at Frankfort, of the commission of seventeen, and finally of the German national assembly, and in each occupied the position of a moderate partisan of democracy. He retained his seat in the national assembly during its last sittings at Stuttgart. He was expelled from Berlin and afterward from Breslau on the failure of the revolution, and after residing for two years at Bonn removed into Switzerland, where he now (1862) occupies the chair of history in the university of Zürich. He has published many works, principally of a historical character.

VENEER, a thin sheet of wood or other material used as a sort of plating to give a handsome exterior finish to articles of cabinet or other work, which are made of a groundwork of cheaper and it may be of stronger materials. The art of veneering is not of modern invention, but according to Pliny was introduced about his time, and was used for reducing the cost of the enormously expensive tables of rare woods which were much sought after by the wealthy Romans. The veneers were formerly cut with thin hand saws and pit saws from blocks of wood; and in 1806 Mr. Brunel patented a method of splitting them off in large sheets by means of a horizontal blade composed of several pieces of steel placed exactly in a line on their lower surfaces, but with their edges slightly rounded and very keen. A short sawing motion was given to the blade while the block of wood was steadily brought by machinery under its action. One slice being taken off, the block was raised up exactly the thickness of the veneer, and the operation was renewed to separate another layer. For straight-grained pliant woods the machine answered very well, and it had the advantage of converting all the wood into veneers without waste, which in the methods now in use amounts to about ⅛ of the whole wood. Still a more perfect apparatus was needed for general use. This was at last provided in the circular saw, the kinds of which used for this purpose, sometimes 20 feet in diameter, are noticed in the article Saw, vol. xiv. p. 375. The machinery for carrying the block and adjusting it for each new cut is necessarily of the nicest construction, admitting of the most exact measured movements of the smallest extent, as may well be conceived when it is understood that as many as 100 veneers have been obtained from wood only an inch thick, and that in ordinary operations each block of 6 inches width is expected to furnish as many as 15 sheets to the inch thickness; each block of a foot width, 14 sheets; of 2 feet, 12 sheets; of 3 feet, 10; of 4 feet, 9; and of 5 feet, 8. The work is done in establishments usually connected with saw mills, and known as veneer mills.—The sheets as produced, rough on both sides, are ready for the cabinet maker. As required for use, he shapes them for the surfaces they are to cover, and roughens them still more with an iron toothing plane, doing the same thing also to the face of the work upon which they are to be laid, in order that the glue which is to fasten them together may obtain a firm hold. He also shapes a wooden cover for the veneer to come between it and the clamps, which are to hold the veneer fast down until the glue has hardened. This cover, called a caul, is made to fit the face of the work exactly, if this is curved having a corresponding curvature, &c. The clamps are wooden bars long enough to extend entirely over the work. They are laid across it in pairs, one bar on each side, and are secured together by iron screw bolts and nuts at the ends. The surface of the work is warmed, and is brushed over with thin glue. The veneer and caul are both well heated, and one side of the former, also covered with glue, is laid down upon the other glued surface; the heated caul is laid upon the back of the veneer, and the clamps are screwed down, the pairs a few inches apart. The glue is kept in a fluid state by the heat, and the excess of it is pressed out by the clamps. In cases where the clamps cannot be conveniently adjusted, other methods are resorted to for obtaining the required pressure, as by means of numerous braces extended from the caul to some fixed object, as the wall or ceiling of the building. Another method of laying veneers is by means of a very wide and thin hammer called the veneering hammer, for which a block of wood 3 or 4 inches square is sometimes substituted. The veneer being properly placed is rubbed down by hand, several men working at it if it is of large size. The veneering hammer, furnished with a projecting edge of sheet iron or steel, is next pressed down upon the veneer, working from the centre toward the edge. Several men are occupied in this together, and the surface of the veneer is kept covered with hot size to keep the glue beneath fluid, and also to lessen the friction of the hammers. If on tapping the surface with the hammer the sound indicates imperfect contact, more hot size is added and the work of the hammer is repeated. Sometimes it is necessary to apply a hot iron over spots where the glue has set, and extend this gradually toward the edge, so as to form a channel way along which the excess may be pressed out. The outer surface of the veneer is finally dressed by means of planes and scrapers, and polished with a brush or polisher, in the usual method of polishing ornamental woods.—Veneers of ivory and of bone are used for some purposes; and in Paris a pianoforte was some time ago entirely covered with a single sheet of ivory cut in a spiral from an elephant's tusk. The manufacturer advertised to supply such sheets 150 inches long and 30 wide. In the United States department of the great exhibition of 1851 there was a veneer of this kind 40 feet long and 12 inches wide.—The inlaying of thin strips of wood or veneers in wood of other colors has been treated in the article Buhlwork.—A remarkable variety of veneering has been recently introduced into the United States, called "pressed work." Any number of veneers are laid together, the grain of each one at right angles to that of the adjacent layers, and all being well saturated with glue are strongly compressed until the whole is united firmly in one mass. For curved work the pressure is applied upon the mass placed while hot in moulds. By this method the backs of chairs are made in graceful curves and of great strength, the crossing of the grain preventing all danger of splitting. Strong plain wood, as black walnut, may be used for the inner layers, while the outer may be of rosewood or other highly ornamental wood. The tops of tables thus made are not liable to warp, and the method has been successfully applied to the construction of tables for sewing machines. Dished or spheroidal pressed work may be made in any desired curves by cutting the veneers into strips of varying width according to the part of the mould into which they are to be pressed.—Ornamental surface in relief has been given to veneers by pressing them between two moulds or dies, and filling the concavities on the hollow side with mastic or some plastic substance. Before pressing them, the surface to be in relief is smoothed and polished, and paper is pasted over the other. The dampness of the paste favors the adjustment of the wood to the irregularities of the die, from which the veneer is not removed until all moisture has disappeared.

VENETIA, in ancient geography, a district of Cisalpine Gaul, and after the division by Augustus a separate region of Italy, bounded by the Carnic Alps, the Timavus (now Timavo), the Adriatic, and the Athesis (Adige). It was a fertile territory, the principal productions of which were wool, sweet wine, and race horses. The inhabitants, the Veneti or Heneti, were reputed to be descendants of the Paphlagonian Heneti, brought to the shores of the Adriatic by Antenor, a Trojan hero, the legendary founder of Patavium (Padua). Others supposed them to be kindred to the Celtic Veneti in Gallia Lugdunensis; but they not only spoke a different language from that of the Celts, but also lived in continual hostility to the Gallic tribes in their neighborhood. According to Herodotus, they inhabited Illyria. Modern critics are inclined to regard them as Slavi, of the same branch as the Vends or Vindes in the neighboring Illyrian provinces of Austria. They early entered into an alliance with Rome, and subsequently became her subjects without resistance. Under the early emperors they enjoyed great prosperity, but during the 3d, 4th, and 5th centuries their territory was frequently devastated by the invading barbarians. The invasion of the Huns, under Attila, drove many of them to the islands and lagoons of the Adriatic, where they became the founders of Venice. (For modern Venetia, see VENICE.)

VENEZIANO. I. ANTONIO, an Italian painter, born in Venice about 1309, died in Florence in 1384. He was a pupil of Angelo Gaddi, and enjoyed a distinguished reputation throughout Italy, in the chief cities of which he painted. Among his most remarkable works were his frescoes in the Campo Santo at Pisa, the best, according to Vasari, executed there. Late in life he became a physician, and died through devotion to his professional duties while the plague was raging in Florence. II. DOMENICO, an Italian painter, born in Venice in 1406, killed in Florence in 1462. He was instructed in oil painting by Antonello of Messina, and was one of the first to practise that branch of the art in Italy. Having acquired considerable reputation in Perugia and elsewhere, he was invited in conjunction with Andrea Castagno to paint a chapel in the church of Sta. Maria Novella in Florence. The latter painter, inflamed with jealousy at the superior effects produced by Domenico's method, and by the admiration which his works excited, succeeded in acquiring from him his secret, and then assassinated him. Domenico was buried in the church which had been the scene of his last labors, but the works executed by him there have long since perished. III. AGOSTINO (DE MUSIS or MUZI), an Italian engraver, born in Venice probably in the latter part of the 15th century, died subsequent to 1536. He was a pupil of Marc' Antonio Raimondi, whom he aided in many of his plates from Raphael's designs, and whose style he followed. Subsequent to the death of Raphael he worked alone, producing many admirable portraits, beside prints after Raphael, Giulio Romano, and other masters. His "Skeletons, or Burying Place," after a design by the sculptor Bandinelli, is considered his masterpiece. He also made spirited copies on copper of several of Albert Dürer's woodcuts. He is said by Strutt to have been the first engraver who practised stippling.

VENEZUELA (It. diminutive of *Venezia*), a republic of South America, occupying the N. E. portion of the continent, extending from lat. 1° 12′ to 12° 25′ N. and from long. 59° 45′ to 73° 17′ W. It is bounded N. by the Caribbean sea, E. by the Atlantic ocean, British Guiana, and Brazil, S. by Brazil, and W. and S. W. by New Granada. Its area is 426,712 sq. m. It is divided into the following 21 provinces:

Provinces.	Pop. in 1854.	Capitals.	Pop.
Apure	15,479	Achaguas	2,000
Barcelona *Maturin	52,163	Barcelona	15,000
Varinas *Portuguesa	109,497	Varinas	4,000
Barquisimeto *Taracuy	112,755	Barquisimeto	12,000
Carabobo *Cojedes	96,967	Valencia	16,000
Caracas *Guarico *Aragua	242,888	Caracas	50,000
Coro	40,476	Coro	4,000
Cumana	50,671	Cumana	12,000
Guayana *Amazonas	56,471	Ciudad Bolivar or Angostura.	6,000
Maracaybo	42,832	Maracaybo	14,000
Margarita	18,305	Asuncion	3,500
Merida *Tachira	62,116	Merida	6,000
Trujillo	44,788	Trujillo	4,000
Total	945,408		

According to the latest enumeration, the total population is 1,564,433. The principal towns are Caracas, the capital, on the Guaire, an affluent of the Chico; Valencia, near the lake of the same name; Barcelona, on the coast of the Caribbean sea; Maracaybo, on the lake of the same name; Cumana, near the gulf of Cariaco; Barquisimeto, on an affluent of the Portuguesa river; Guanare, on the Guanare river; San Carlos, on the San Carlos, a branch of the Portuguesa; Araure, on the Acarigua; Puerto Cabello and La Guayra, both on the coast; and Asuncion, on Margarita island.—The coast line of Venezuela extends from the New Granadian boundary, in long. 73° 17′ W., to the mouth of the Amacura river, at the S. E. point of the delta of the Orinoco, a distance of 1,584 m., of which about 150 m. are washed by the Atlantic ocean, and the remainder by the Caribbean sea and the gulf of Paria. The Atlantic coast is very low, and is occupied by the delta of the Orinoco, whose 13 or 14 mouths by the deposit of their alluvium form numerous islands, which are soon covered with trees and shrubs. The peninsula of Paria separates the gulf of that name from the Caribbean sea. This landlocked gulf has bold and rocky shores, with several small harbors on the S. shore of the peninsula. The gulf of Cariaco is a fine roadstead, protected by the peninsula of Araya, opposite which lies the island of Margarita, 40 m. long and 20 m. broad in its widest part. The rocky shores continue, though at a less elevation, from Cumana to Barcelona, a distance of 72 m., with several good harbors. From Barcelona to Cape Codera is a low, marshy coast, 128 m. in length. Beyond Cape Codera the coast range approaches the shore, and the mountains rise like a wall from the water's edge. There are several tolerable harbors, though open to the northers, along this line, the most important of which is that of La Guayra, the port of Caracas. From Puerto Cabello to Coro the shores are again low and sandy, but occasionally covered with mangrove trees or other bushes. The peninsula of Paraguana is connected with the mainland by a long spit, 3 m. wide, consisting mainly of low hills of sand, without shrub or tree. The peninsula has a central mountain summit, 1,320 feet in height, called El Cerrito de Santa Aña. There are several small harbors along its shores. From the peninsula W. to the lake of Maracaybo the coast is again low and sandy, much of it covered with swamps and lagoons; and this condition continues beyond the lake as far as Cojoro, where it rises again, and continues its elevation to the W. line of the republic.—With the exception of the table lands of the N. E. and that portion of the coast lying along the gulf of Coro, Venezuela is abundantly watered. The Orinoco, its largest river, runs its course of 1,500 m. mainly in the republic, has over 400 navigable tributaries, is more than 3 m. wide at the distance of 560 m. from its mouth, drains 250,000 sq. m. of territory, and discharges its waters into the Atlantic and gulf of Paria by numerous mouths, one of them 60 m. in width. Its largest tributaries are, on the S. side, the Ventuari, the Caura, and the Caroni; on the N. side, the Meta and the Apure, with its hundred affluents. The S. and S. E. portion is drained by affluents of the Rio Negro, which is united to the Orinoco by the Cassiquiare and the Essequibo. In the N. a great number of small streams flow into the Caribbean sea and Lake Maracaybo, a few of which, such as the Catatumbo, Zulia, Escalante, Motatan, Guarapiche, Neveri, Unare, Tuy, and Tocuyo, are navigable. The principal lakes are Maracaybo, containing 8,400 sq. m., Valencia, Tacarigua, and Guanipe.—Venezuela has 3 distinct mountain systems, beside some isolated peaks, viz.: the Andes, and their prolongation in the coast range; the Sierra de Bergantin, in the N. E.; and the mountainous region of the S. E., which forms a part of the Sierra de Parima. The Andes of Venezuela are the northernmost portion of the eastern Andes of New Granada. Just before entering Venezuela, near the town of Pamplona, they divide into two branches; one runs N. and terminates in the peninsula of Goajira, near Chichibacoa, taking where it enters Venezuela the name of the Sierra de Perija, and further N. that of the Montes de Oca; the other, turning N. E., terminates on the bank of the river Cojedes, S. of Barquisimeto, though the coast range, which commences on the opposite bank of the river, and spreads out into a wide table land, extending at some points to the Caribbean sea, may claim to be a portion of it. The N. branch of the Andes attains no great height, the loftiest summit of the Sierra de Perija not exceeding 4,200 feet; the N. E. branch is more elevated. The Sierra Nevada de Merida, in the province of Merida, is the only summit which rises above the line of perpetual snow, its two peaks being respectively 15,310 and 15,342 feet above the sea. The Picacho de Mucuchies and the Salado both attain a height of over 14,000 feet, and the *paramos* or table lands of Agrias, Zumbador, Batallon, Apure, Portachuelo, Niquitao, and Rosas are more than 10,000 feet above the sea level. The coast range is lower, its highest table land only reaching the altitude of 4,500 feet, and its loftiest peaks, the Silla de Caracas and the Picacho de Naiguata, 8,808 and 13,480 feet respectively. The highest summits of the Sierra de Bergantin, the mountainous district of the N. E., are Turumiquire, 6,863, the Cerro Pionia, 6,860, and the Arrempuja, 5,820 feet above the sea. The table lands of the district are from 3,000 to 4,000 feet high. The most mountainous portion of Venezuela is that lying S. and E. of the Orinoco, a vast, and much of it an unexplored territory. The Parima or Pacaraima range, which forms the boundary between Venezuela and British Guiana and Brazil, sends its offsets westward in 4 distinct spurs, beside several confused groups and isolated summits. At the N. the Imataca mountains extend N. W. from the Essequibo to the Orinoco, uniting with the Piacua range. Below, and trending more to the N. N. W., are the Arimagua mountains, extending from the Mazaruni to the Curuvini river; and parallel with them, but higher, are the Merumeh and the Usupamo mountains, the latter throwing out two spurs, the Rinocote and the Carapo mountains; while below the 5th parallel a confused mass, known as the Maigualida, Maravaco, and Unturan ranges, fill up the whole region. The peaks of this region are less elevated than those of the Andes, Maravaco, the loftiest, attaining an altitude of only 10,500 feet, while no other much exceeds 8,000, and the table lands are from 3,000 to 4,000 feet high.—The face of the country presents mainly but two aspects: the extensive table lands, which according to their elevation are named *llanos*, *paramos*, *mesas*, and *punos*, dotted here and there with peaks of considerable elevation; and the low, flat, marshy lands of the coast and river and lake basins, overflowed during a part of the year, but some of them, especially in the interior, abundantly fertile during the remainder. The Andes in the N. W., like most of that chain, are granitic, and where they subside in the N. into the coast range, metamorphic. Along the coast near Coro, and westward to the gulf, the surface rocks are of the carboniferous era, and coal of good quality, asphaltum, and petroleum are to be obtained in abundance. The basin of the Orinoco and its principal affluent, the Apure, are entirely secondary, and the *mesas* are mainly underlaid with calcareous rock. The mountains of the S. E. exhibit the rounded forms of the tertiary strata. The delta of the Orinoco is wholly of alluvial and diluvial formation.—The soil of Venezuela is for the most part fertile. The *mesas* are too arid to be productive, and some portions of the coast are sandy and sterile. The *llanos*, in the dry season, present the appearance of a desert, but the first fall of the tropical rains changes them into verdant plains. Many of them are for a part of the rainy season overflowed, and form temporary lakes. The portions too high to be thus submerged yield a rich pasture for vast herds of cattle and horses. The mountainous district of the S. E. is well adapted to grain. It is divided into 3 climatic regions. The lowlands, those which do not rise more than 2,000 feet above the sea level, are called *tierras calidas*, or hot regions; these comprise the greater part of the inhabited portion of the country, and have a uniform temperature, ranging from 80° to 90° F., the average of the year being 82°. The dry season is comparatively healthy, and epidemic diseases are rare. The rainy season is unhealthy, especially to strangers. The lands between 2,000 and 7,000 feet high are called *tierras templadas*, or temperate regions, and have a uniform temperature of 70° to 80° F., the annual average being 71°. This region, except where inundated, is usually healthy. The *punos* or lofty table lands constitute the *tierras frias*, or cold regions, and are mostly uninhabited. The average annual temperature is 49° F. The dry season or summer commences when the sun enters the southern hemisphere, and the rainy on his return to the northern. During the latter period the winds are south-easterly, and the rain falls daily and with tropical violence for months. There is a period, however, about midsummer, in which no rain falls for about 30 days; this is called the little summer of St. John. During the dry season the wind is generally from the N. E.—Venezuela is rich in minerals, though, owing to the influence of the climate and the unsettled condition of the country, they have not been so largely brought into market as in some of the other South American states. At the first discovery of the country it yielded great quantities of gold; but the surface diggings after a time were exhausted, and now but little gold is mined. The mines of Los Teques, Apa, and Carapa have been abandoned for 200 years. Silver was also abundant in the early history of the country; the silver mine of Guanita was once famous, and in the present century there have been found rich silver ores in the mountains of Merida and at Carupano, but they have not been worked to any great extent. The copper mines of Aroa, 70 m. S. W. from Puerto Cabello, are very productive, and the ore yields a large percentage of pure metal. The tin mines of Barquisimeto, once the property of the Spanish crown, and a source of great revenue, have been abandoned. Good iron and lead ores are found. Coal is abundant and of good quality at several points on and near the coast, particularly in Coro. On the Barcelona river, 9 m. from the city of Barcelona, are mines of cannel coal, said to be equal to the best English. Salt is produced in large quantities from the salt mines of the peninsula of Araya and the salines of Paraguana and the gulf of Maracaybo. Sesquicarbonate of soda, the *trona* of commerce, is yielded abundantly by a small lagoon at Lagunillas in Merida. Asphaltum and petroleum are found in the vicinity of Lake Maracaybo. There are also numerous mineral and thermal springs, some of them of a temperature of 212° F.—The climate and soil are well suited to the growth of a most luxuriant vegetation. The region below the level of 3,000 feet is the country of palms, and nowhere on the American continent do they attain a more colossal size, or yield more desirable products. The Indian sago palm flourishes on the lowlands; the *chiquichiqui* furnishes the material for cordage from its fibrous tufts; the *yagua* provides an abundant oil; the *chaguarama* yields material for thatch and excellent laths; the royal palm attains its vast size even in the temperate region, where are found also the wax palm and one or two other species. The cocoa palm is very abundant, and considerable quantities of its oil are exported. The varieties of the cactus are almost innumerable, and often of great beauty. The sensitive plant and the pineapple also abound; and among the fruit-bearing trees are the *palo de vaca* or cow tree, the tamarind, and the various species of *anona* and *laurus*. Of the forest trees, the colossal *bauhinia*, the *bombax ceiba* or silk-cotton tree, the mahogany, *curare*, satinwood, rosewood, black and white ebony, the various caoutchouc-yielding trees, the copaiba, a species of *calamus* (rattan palm), which yields the dragon's blood, the tree ferns, and the arborescent grasses (*bambusa*), are the most remarkable in the lowlands. On the higher lands the *cinchonæ*, or trees yielding the Peruvian bark of commerce, form vast forests by themselves. The vanilla, the plantain, the *niopo* (an acacia, whose bruised seeds are used for snuff by the natives), and the *strychnos* also flourish here. Among the cultivated plants of the country are the cacao and coffee trees, sugar cane, indigo, and cotton. The last named is perennial, and grows as a tree throughout the lowlands. The plantain supplies the staple food of a large portion of the inhabitants. The different varieties of banana, the orange, melons, potatoes, the sweet potato, the yucca (*jatropha manihot*, yielding cassava), maize, which in the lowlands yields two crops a year, and beans as well as many other legumes, are also much cultivated. Tobacco is an important crop, and that of Varinas is much esteemed in Europe.—Wild animals abound. Of monkeys especially Venezuela has a greater variety than almost any other country, one of them, the *titi*, being when full-grown only 6 inches in length. The tapir and the *vaquira*, a small species of wild hog, roam along the banks of the rivers. Of the carnivora, the jaguar, now growing scarce, the puma or American lion, the ounce, and the tiger cat are the principal. The capybara, venado (a species of deer), agouti, porcupine, rabbit, sloth, and ant-eater are the other principal quadrupeds. The birds are numerous, and many of them of exquisite plumage. They belong mainly to 7 or 8 orders, conspicuous among which are the tanagers, toucans, parrots, humming birds, flamingos, pelicans, wild ducks, cranes, wild geese, &c. The lories of Venezuela are among the most beautiful of American birds. The principal reptiles are the alligator, the crocodile, the boa constrictor, the rattlesnake, the chameleon, the iguana, and numberless other species of lizards. The manatee, or sea cow, the *chigüire* or water hog, many species of turtle, and the *tonina*, dolphins of great size, are among the amphibia. Fish are abundant. The *lisa*, a favorite fish, is taken in large quantities near the island of Margarita, and salted and exported. Near the same place is a pearl fishery of considerable importance. The insects are exceedingly numerous and troublesome, and some of them very venomous; among them are found centipedes of great size, scorpions, huge spiders, ants, termites, locusts, mosquitoes, chigoes, and the cochineal. Of the domestic animals, there are large herds of cattle and horses, in a wild state, roaming over the *llanos* or *pampas* and the higher plains in the rainy season. Mules and asses are extensively raised for market. Sheep, goats, and pigs are also reared to some extent. Many of the small islands on the coast which belong to Venezuela are the resort of sea fowl, and contain rich deposits of guano, of a quality little inferior to the Peruvian.—The inhabitants of Venezuela are: 1, whites, mainly of Spanish extraction, comprising not more than ¼ of the population; 2, domesticated Indians, mostly of the Quichua and Guarani races, the former in the west, the latter in the east, forming ⅙ of the whole number of inhabitants; both are docile and industrious, and are the miners, agriculturists, herdsmen, and manufacturers of the republic; 3, negroes, not over ⅛ of the population, and all free, having been emancipated from 1814 to 1854; and 4, mixed races, of 5 or 6 varieties, crosses of whites, Indians, and negroes, who constitute nearly ½ of the whole. There are also 40,000 or 50,000 independent Indians, of various tribes and speaking different languages, some probably of the original Carib stock once dominant here. The Guaiacas are remarkable for their diminutive stature; the Otomaques, in the plains of the Apure, are the most degraded of all the Indian tribes, and are addicted to eating clay. The mixed races are indolent, and generally unintelligent. The whites are better educated, and retain the power of the state in their own hands. Agriculture is the engrossing pursuit of the people, though but little more than ⅒ of the whole area is under cultivation. Improved processes of cultivation have not been generally introduced, yet the greater part of the arable land is so fertile as to give ample returns for labor. The principal crops are cotton, coffee, sugar, cacao, maize, and in the higher lands wheat and other grains, indigo, tobacco, beans, peas, &c. The yield of maize is said to be 240 fold. The manufactures of Venezuela are few and rude, consisting mainly of leather, straw hats, hammocks, coarse cotton cloth, woollen stuffs, and earthenware. Most of these are produced in the mountainous districts. The foreign commerce is considerable, and would be much greater but for the badness of the roads, and the want of any other means of transportation into the interior except the backs of mules. Among exports coffee now holds the first rank, the coffee of Maracaybo and La Guayra being in good demand in the European and American markets. The other principal articles of export are cotton, cacao, sugar, indigo, tobacco, salt, hides, live stock, tallow, horns, sarsaparilla, dye woods, and timber. The imports are cotton and linen goods, flour, provisions, hardware, wines, and specie. In 1853–'4 the export of coffee amounted to 38,771,742 lbs.; cacao, 9,938,177 lbs.; cotton, 1,497,921 lbs.; tobacco, 1,144,042 lbs.; hides, 632,676 pieces; other skins of animals, 446,042. In 1854–'5 the imports amounted to $6,241,686, and included cotton fabrics to the value of $2,275,245; woollen goods, $253,362; linen goods, $689,286; silk goods, $197,224; liquors, $353,515; provisions, $495,137; hardware, $256,703; specie and sundries, $1,721,214. In 1855–'6 the imports into the republic were $5,401,229, and the exports $6,403,840. In 1854–'5, 468 vessels, measuring 76,410 tons, entered the Venezuelan ports, and 690 vessels, measuring 95,645 tons, departed. A railroad has been put under contract from Puerto Cabello to San Felipe, a distance of 50 m. An American company with exclusive privileges has a number of steamboats plying on the Orinoco. There are also steamboats running on the lake of Valencia, and a line along the coast from La Guayra to Maracaybo, touching at intermediate points.—Caracas has a university, and there are 13 provincial colleges, to which the government allows an annual subsidy of about $10,000. A military school has also been recently established at Caracas. The religion of the republic is Roman Catholic, but other religions are tolerated. The clergy are strictly subordinate to the civil power in Venezuela; the government exercises the patronage of the church, and the papal sanction, when required, is transmitted through it. The archiepiscopal see is at Caracas, and there are two bishoprics, one at Merida and the other at Angostura. The government is a republican democracy. Its constitution was adopted in 1830, when it became an independent republic. The president, vice-president, ministers, governors of provinces, senators, representatives, and deputies to the provincial assemblies are elected for a term of 4 years, by the cantonal electors. The cantonal electors are themselves elected by the parish assemblies, composed of the voters of each parish, for a term of 2 years. Foreigners of whatever nation are admitted into Venezuela, and are subject to the same laws and enjoy the same privileges as native citizens. The legislative department comprises a senate of 2 members from each province, and a house of deputies consisting of one member for each canton of 25,000 inhabitants. The judicial power is confided to the supreme court, 3 superior courts, and the courts of first instance, of which there is one to each canton. The municipal government is conducted by the council of each canton. The other provisions of the constitution are generally similar to those of the constitution of the United States. The revenue from all sources in 1852-'3 was $2,705,055, the expenditures $8,248,031, showing a deficit of $5,542,976 for that year. The national debt in July, 1849, was $22,865,620, and it has since been considerably augmented. The active force of the army is stated at 10,000 men. In 1850 there were 19 generals, 23 colonels, and over 60 officers ranking above the grade of captain. There is also an organization of national militia. The navy consists of 2 steamships and 4 war schooners. Great exertions have been made within a few years past to attract emigrants to Venezuela; they are provided with the necessary lodgings and assistance at the seaports, and a *fanega* (500 square fathoms) of land is given to each one who labors in the country; they receive naturalization papers on their arrival, and are protected in the contracts they make with farmers or landed proprietors.—The island of Margarita and the E. part of the coast of Venezuela was discovered by Columbus in 1498, and the whole coast by Ojeda and Vespucci in 1499. On entering Lake Maracaybo, they found an Indian village constructed on piles over the water (a common occurrence in those portions of the country liable to inundation), and thence called it Venezuela (Little Venice), from its fancied resemblance in situation to Venice. This name, originally applied only to the region near the lake, was eventually extended to the whole country. The Spanish conquerors at first gave it the name of Tierra Firme, and included under this name New Granada and Ecuador also; at the present day only the E. coast of Venezuela is known as Tierra Firme. The first settlement was made in 1520, at Cumana. Coro was founded in 1527. About 1540 indications of gold were discovered at several points along the coast range, and in 1545 Tocuyo was founded, Barquisimeto in 1552, Valencia in 1555, and Caracas in 1567. The demand for cacao, which was largely produced in the Dutch settlement at Curaçoa, led to the formation in 1778 of the Guipuscoa company in Spain, which sent out emigrants to cultivate cacao and indigo. This company was dissolved in 1778. When Napoleon made his brother Joseph king of Spain, Venezuela was in 1810 the first of the Spanish colonies to declare for the ancient dynasty; but becoming dissatisfied with the regency, it proclaimed its independence in 1811. In 1812, by the treaty of Victoria, it returned to the sway of Spain; but in 1813 it again revolted under Gen. Bolivar, and after a protracted conflict, with varying success, the republic of Colombia, embracing New Granada, Venezuela, and Ecuador, was declared independent in 1819. The contest with Spain did not entirely cease till 1823, though the Spanish force had been for some time confined to a small territory. In 1821 a congress was called, and a constitution adopted for the new republic. In 1831 the 3 states separated amicably, and a new constitution was adopted by Venezuela. For nearly 20 years the presidency was held successively by Gens. Paez and Soublette and Dr. Vargas. In 1848 Gen. José Tadeo Monagas, who had been elected president, assumed dictatorial powers, and ruled the country for 11 years. He was overthrown by a revolution in 1859, but the country still remains in a very unsettled condition. (See Paez.)

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* Formed since 1854 by the subdivision of the provinces to which they are joined in the table.

VENICE, a government of Austrian Italy, generally known under the name of Venetia, bounded N. W., N., and N. E. by the Tyrol and Carinthia, E. and S. E. by Goritz and Gradisca and the Adriatic, S. by the Po, separating it from Ferrara, and W. by Lombardy; area, 9,216 sq. m.; pop. in 1857, 2,166,477. It is divided into the 8 delegations or provinces of Belluno, Padua, Polesina, Treviso, Udine, Venice, Verona, and Vicenza. It has a mountainous surface in the N., broken by ramifications of the Alps. Elsewhere there are large fertile plains, and in the S. E. lagoons and marshes. The Po, Adige, Bacchiglione, Brenta, Piave, Livenza, and Tagliamento are the principal rivers. Lake Garda and the Mincio form part of the W. boundary.—The delegation of VENICE is bounded N. and N. E. by Treviso and Udine, E. and S. E. by the gulf of Venice, S. by Ferrara, and W. by Polesina and Padua; area, 1,050 sq. m.; pop. 298,425. It consists almost entirely of lagoons and marshes, in the midst of which are many fertile islands. It is traversed by the river Piave. The chief productions are grain, wine, silk, and salt.

VENICE (It. *Venezia;* anc. *Venetia*), a seaport city in Austrian Italy, capital of the government of the same name, at the N. W. end of the Adriatic, in lat. 45° 25′ 24″ N., long. 12° 20′ 15″ E., 185 m. E. from Milan; pop. in 1857, 118,172. About 4 m. from the coast is a long and narrow belt of land, through a number of openings in which the waters of the Adriatic make their way between the mainland and the belt, and form a lagoon from 25 to 30 m. long, and about 5 m. broad. Into 72 little islands in this lagoon piles have been driven, and upon them Venice has been built, so that from any point of view the city seems to be floating on the water. Six channels at present exist between the gulf of Venice and the lagoon, the northernmost of which is the Porto di Tre Porti, navigable only for very small vessels; next to this is the Porto di San Erasmo, and S. of this the Porto di San Nicolo del Lido, now choked up, but formerly the most important channel. The deepest opening is at present the Porto di Malamocco. The remaining two are the Porto di Chioggia and the Porto di Brondolo. These channels are commanded by forts on both banks, whose batteries cross their fire with each other; and the northern portion of the lagoon is broken up into impassable marshes. The city is a little more than 2 m. long, 1½ m. broad, and about 6 m. in circuit. It is divided into two unequal parts by the Canalazzo or grand canal, which runs through it in the form of an S reversed; and it is also traversed by 146 smaller canals, which penetrate the city in all directions. These canals are crossed by 360 bridges; but over the grand canal there is only one, the Rialto. This, the most magnificent in Venice, consists of a single arch 90 feet in span and 24 feet in height, and was built in 1590 of marble, at a cost of more than $500,000. It was originally constructed of wood, but was repeatedly burned down. Two ranges of shops divide its upper surface into 3 narrow parallel streets. Another celebrated bridge, the *ponte de' sospiri* (the bridge of sighs), which connects the ducal palace with the state prison, was built in the 16th century by Antonio da Ponte. The grand canal varies in breadth from 100 to 180 feet, and on both sides is lined by magnificent buildings, many of them immediately on the water's edge, so that people step from them into the gondolas. The private houses, built chiefly of brick, are generally 3 or 4 stories in height, rarely fronted with arcades, but usually having balconies. The rooms are often exceedingly small. The larger mansions are commonly of a square form, with an open court in the interior. Many of the houses have a land and a water entrance. The land door communicates with a *calle* or lane; for although the communication between the various parts of the city is by water, Venice possesses a large number of alleys about 4 feet wide paved with smooth flags or marble slabs. The only two streets worthy of the name are the Merceria, which is from 12 to 20 feet broad, and is situated in the centre of the city, and the Piazza of St. Mark, with the Piazzetta leading from it to the canal. The Piazza is 576 feet in length and from 185 to 269 in breadth, surrounded on all sides by elegant buildings, and bordered by arcades with handsome shops and cafés. It is the centre of gayety in the city, and the great resort of loungers and foreigners. These are the only open spaces in Venice, with the exception of the ground in front of some of the churches and at each end of the Rialto. Transportation is supplied by boats called gondolas, of which there are said to be more than 4,000. By an edict of the 15th century, which still remains in force, they are invariably black all over.—The public buildings are numerous and splendid. Of the churches, the most important is the cathedral of St. Mark, which was the ducal chapel until 1817, when the patriarchal seat was removed to it from San Pietro. The foundations of the present edifice were laid in 977, but it was not consecrated until Oct. 1111. It is built chiefly in the Byzantine style, and its form is that of a Greek cross with the addition of porches. When it was building every vessel returning from the East to Venice was obliged to bring pillars and marbles for the edifice, the principal front of which, 170 feet wide, has 500 colums of various shapes and colors. Over the central portal of the vestibule stand the celebrated bronze horses, brought from the hippodrome of Constantinople when that city was taken by the crusaders; they were carried to Paris by Napoleon, but restored in 1815. The edifice is surmounted by 5 domes, the central one of which is 90 and the others 80 feet in height. The interior is exceedingly rich, the walls and columns being of precious marbles, and the floor of tessellated mosaic work. Near the angle of the Piazza and Piazzetta is the *campanile*, or bell tower of St. Mark. It is a quadrangular mass of brick, above 40 feet square at the base with a pyramidal pinnacle, on the top of which was a colossal figure of an angel with outspread wings at the height of 323 feet from the ground. The church of the Frari, or Santa Maria Gloriosa di Frari, was built or designed by Nicola Pisano about 1250, and is celebrated for its numerous and magnificent mausoleums; among them are that of Titian, that of Canova, containing only his heart, and that of the doge Francesco Foscari, immortalized by Byron. The church is also adorned with paintings by Titian, Palma, Bellini, and Salviati. The Westminster abbey of Venice is the church of San Giovanni e Paolo, in which are buried a large number of the illustrious dead of the republic. Among the paintings with which it is adorned is the celebrated "Peter Martyr" of Titian. Of the other churches, the most noted are La Madonna dell' Orto, a Gothic edifice, built about 1350; San Pietro di Castello, the cathedral of Venice from the earliest times until 1817; San Zaccaria, built in the renaissance style about 1450, but not finished until about a century later; Santa Maria de' Miracoli, built toward the close of the 15th century; San Francesco della Vigna, a magnificent building, begun in 1554, but still unfinished; Il Santissimo Redentore, situated on the island of Giudecca, begun by Palladio in 1578, and considered by architects to be the finest of his structures; Santa Maria della Salute, decorated with many works of art by Titian, Salviati, Tintoretto, and others; and the church of the Jesuits, built by Rossi in 1728, containing the ashes of Manini, the last doge of Venice, with the simple inscription: *Æternitati suæ Manini cineres.* One of the most imposing public buildings is the ducal palace, which was first built in 820, and has since that time been once demolished by a mob, and twice totally and 3 times partially destroyed by fire. It stands on the eastern side of the Piazzetta, and is built in the form of an irregular square in the Gothic style, but in many of the repairs and alterations the later Italian style is introduced. Among the more modern additions is the beautiful entrance called *porta della carta*, opening from the Piazzetta into the great court. Opposite to this entrance is the celebrated giants' staircase, which derives its name from the colossal statues of Mars and Neptune by Sansovino standing at the head of it; upon this landing the newly elected doge received the *beretta* of his office. The palace contains many magnificent rooms, one of which, the *sala del maggior consiglio*, is 175½ feet long, 84⅓ broad, and 51⅓ high; it is enriched with splendid paintings, some of which are among the earliest large specimens of oil paintings upon canvas. Other apartments are the *sala delle quatre porte*, so called from the 4 doors designed by Palladio; the *sala del collegio*, in which the doge and his council received foreign embassies; and the *sala del consiglio dei dieci*, in which the tribunal of that name held its sittings. In the two lower stories are the *pozzi*, the cells described by Hobhouse in the notes to the 4th canto of "Childe Harold;" and the celebrated *sotto piombi* ("under the leads") are at the top of the building, and necessarily intensely hot in summer and cold in winter. Silvio Pellico was one of the last prisoners confined in these prisons, which have now been fitted up as dwelling apartments or converted into lumber rooms. Opposite the ducal palace, and connected with it by the bridge of sighs, are the *carceri* or public prisons, built in 1589 by Antonio da Ponte, and capable of containing about 500 persons. The Palazzo Reale, standing upon 50 arches, and forming nearly the whole N. side of the Piazza, is the old Procuratie Vecchie, converted into a palace by Eugène Beauharnais, and continued along the W. side of the Piazza. The Palazzo Grimani, one of the finest of the more modern palaces, is now used as a post office. The Palazzo Vendramin Calergi, built in 1483, was reckoned in the 16th century the finest palace in Venice. The Palazzo Manfrini is a modern building, and contains one of the best collections of paintings in Venice. The past greatness of the republic is most conspicuously shown in the arsenal, which is a large building situated on an island near the E. end of the city. It is surrounded by ramparts nearly 2 m. in circuit, and contains 4 basins or wet docks, as well as several dry docks and slips. Near the principal entrance are the 4 marble lions brought from Greece in 1685, one of which, of very ancient workmanship, stood at the entrance of the Piræus. The arsenal at one time employed 16,000 workmen, but in the 18th century their number was reduced to 3,000, and subsequently a still smaller force was employed. At the close of the last century the revolutionists destroyed many of the curious articles in the model room of the arsenal, and among other things the Bucentoro, the vessel in which the doge annually espoused the sea. The ceremony, which was intended to assert the dominion of the republic over the Adriatic, was celebrated each year on the feast of the Ascension, and may be traced back to the year 1245. The doge, in presence of the nobles and people, dropped a nuptial ring into the deep off the Lido port, repeating at the same time the formula: *Desponsamus te, mare, in signum veri perpetuique dominii.* On the right of the cathedral of St. Mark is the Torre dell' Orologio, a lofty tower built by Pietro Lombardi in 1494, containing a curious clock, above the dial of which are two large bronze figures called by the people Moors, which strike the hours upon a bell. The Dogana or custom house is a large structure built early in the 16th century. The Biblioteca Antica, in which the library of St. Mark was kept until 1812, now forms part of the Palazzo Reale. The library, which was founded by a legacy left by Petrarch, now consists of about 60,000 volumes, and is kept in the *sala del maggior consiglio* in the ducal palace. Adjoining the Biblioteca is the Zecca or mint, a fine specimen of Italian rustic work by Sansovino. At the southern end of the Piazzetta are the two celebrated granite columns, one of which was surmounted by St. Theodore standing on a crocodile, carrying a shield on his right arm and wielding a sword in his left hand; on the other was the winged lion of St. Mark, the ancient emblem of the republic. Beside these buildings, Venice has an academy of the fine arts, with one of the richest collections of paintings in Italy; a lyceum, with a library, a museum of the national sciences, and a botanic garden; three gymnasia, a seminary, an

Athenæum, an Armenian monastery called San Lazaro, several hospitals and charitable institutions, and 7 theatres. Of these last, the principal is the Fenice, built originally in 1791, rebuilt in 1836, and now one of the finest in Italy, and capable of containing 3,000 spectators.—The manufactures of Venice consist of woollens, serges, canvas and ropes, velvet, silk stockings, laces, gloves, various articles of *bijouterie*, and especially glass ware, in which about 4,500 persons are said to be still employed. In the manufacture of glass, which was carried on upon the island of Murano, Venice was the teacher of Europe, and her wares maintained their reputation as the most perfect and elegant in use through the middle ages down to the close of the last century. The exports consist of grain, raw and wrought silk, paper, fruit, cheese, oil, and wine; the imports of wheat and other kinds of grain, olive oil, cottons, dye stuffs, and various sorts of colonial produce. The trade is principally carried on in vessels of very small tonnage, and is in a languishing condition. Daru gives the following picture of her past maritime greatness: "In the beginning of the 15th century, the annual value of the goods exported from Venice by sea, exclusive of those exported to the states adjoining her provinces in Lombardy, was estimated by contemporary writers at 10,000,000 ducats; the profits of the out and home voyage, including freight, being estimated at 4,000,000 ducats. At that period the Venetian shipping consisted of 3,000 vessels of 100 to 200 tons burden, carrying 17,000 sailors; 300 ships with 8,000 sailors; and 45 galleys of various size kept afloat by the republic for the protection of her trade, having 11,000 men on board. In the dockyards 16,000 laborers were usually employed. The trade to Syria and Egypt seems to have been conducted principally with ready money, for 500,000 ducats are said to have been annually exported to those countries; 100,000 were sent to England." In 1859 the number of vessels entered was 4,493, tonnage 474,410, and the number cleared was 4,517, tonnage 469,512; in 1859 the entrances were 4,581 vessels of 537,285 tons, and the clearances 4,466 vessels of 519,241 tons. About ¾ of these were engaged in the coasting trade. The imports and exports for several years both by land and sea were as follows:

Years.	Imports.	Exports.
1856	$21,071,800	$10,649,400
1857	21,361,200	9,849,400
1858	25,998,800	9,437,000
1859	19,374,400	8,917,400

The imports were chiefly from the following countries in the order of their values: Great Britain, Turkey, Russia, Belgium, Greece, the Two Sicilies, Holland, the Ionian islands, Sweden and Norway, the Sardinian states, and France and Algeria. The exports are principally to Great Britain, the Papal States, Greece, Turkey, the Ionian islands, the Two Sicilies, France, Algeria, and Brazil.—Venice was early distinguished for its printing, and the editions issued by the Aldus family were celebrated throughout Europe. Here was issued the first book published in Italy; here appeared at the opening of the 17th century the first newspaper published in the world, which took its name from the coin called *gazzetta*, for which it was sold. Here also appeared the first bill of exchange, and here was established the first bank of deposit and discount. Only two or three of the old patrician families still exist.—When Attila invaded Italy in 452, the islands of the lagoon at the extremity of the Adriatic became the refuge of the inhabitants of Padua, Vicenza, Verona, Treviso, and other cities of Venetia. The disasters which followed the dissolution of the western empire added constantly to the number, until at last a large population, forgotten by the Romans and their successors, and out of the reach of the barbarians, was established, and supported itself by fishing, by a few manufactures, and by the commerce of the rivers. Each of the islands constituted a republic by itself, governed by a tribune; but the constant jealousies arising among them caused a general convention to be held at Heraclea in 697, at which a chief of maritime Venetia was elected. To him was given the title of doge (Lat. *dux*), a name of the governors of the Italian provinces sent out by the Byzantine empire, of which the Venetians considered themselves a part. In 809, in a war against Pepin, son of Charlemagne, they made choice of the island of the Rialto (*rivo alto*, the deep stream), upon which they built the city of Venice. Twenty years later they brought from Alexandria the bones of St. Mark the Evangelist, whom they selected as patron of their state. His lion was represented in their arms, and his name was the title given to their country or government. In 997 the small Greek cities of Istria and Dalmatia, unable to defend themselves against the Slavic pirates, formed an alliance with Venice, received judges from the doge, and fought under the banners of the republic. The pirates of Narenta and Croatia were subdued, and the doge from that time took the name of duke of Venice and Dalmatia. Subsequently the republic was engaged in wars, generally successful, with the Norman prince of Apulia, Robert Guiscard, and for the assistance rendered by it received from the Greek emperor, Alexis Comnenus, many new and valuable privileges. In the mean while its commerce was steadily extending itself with its power. In 1099 the Venetians claim to have sent a fleet of 200 vessels to aid the first crusade, and they were involved in many contests in the East. They assisted in the capture of Acre, Sidon, Tyre, and Ascalon; and as long as Palestine remained in the hands of the Christians they held important privileges in many of the cities. About the middle of the 12th century a war broke out between Venice and the Greek emperor, Manuel Comnenus, in which the republic equipped a large fleet, and with it took Lesbos, Samos, and Chios, and attacked Eubœa; but being tricked into empty negotiations, a pestilence broke out in the armament, which lost them the fruit of their efforts. Previously Venice had of its own accord joined the league of Lombardy against Frederic Barbarossa, but, being acknowledged to be foreign to the western empire, withdrew its adherence some time afterward, and in 1177 was chosen by the pope and the emperor as a place for holding a congress. On this occasion the former, out of gratitude to the doge Ziani, is said to have presented him with a ring, saying: "Take this as a pledge of authority over the sea, and marry her every year, you and your successors for ever, in order that all may know she is under your jurisdiction, and that I have placed her under your dominion as a wife under the dominion of her husband;" and from this time the annual custom of wedding the Adriatic was observed. In 1198 Fulk de Neuilly preached a crusade in France, and the crusaders borrowed vessels of the republic. Finding themselves unable to pay the freight, they offered instead their military services; and under the guidance of the almost blind old doge, Enrico Dandolo, they recaptured the revolted city of Zara, and undertook an expedition against Constantinople, which ended in the storming of that city in April, 1204. For their share the Venetians received one half of the spoil of Constantinople, and nearly one half of the empire, although their real conquests were limited to the Morea, and Candia and some other islands. The doge assumed the title of despot of Romania, which continued to be used until the middle of the 14th century. Governors were sent to these possessions under the names of *baili consiglieri* and *camerlenghi*, and many of the patrician families were invested with the rule of some of the islands on condition of doing homage to the republic. Under the doge Pietro Ziani (1205–'29) the first war between Venice and Genoa broke out, which was ended in 1238 through the mediation of the pope. Occupied with their eastern possessions, Venice paid little attention to the affairs of Italy, but through the influence of Gregory IX. formed in 1239 an alliance with the remaining cities of the Lombard league against the emperor Frederic II. In 1258 war again broke out between the republic and Genoa, which lasted with interruptions until 1299. In 1296 Lamba Doria, the Genoese admiral, with 78 galleys, inflicted a terrible defeat upon the Venetian squadron of 97 galleys off Curzola under Andrea Dandolo, burning 66 vessels and capturing 18 with 7,000 prisoners. In June, 1336, an alliance was formed between Venice and Florence, at that time engaged in a war with Martino della Scala. The republic conquered Treviso, Castel Franco, and Ceneda, her first possessions on the mainland; but in Dec. 1338, in accordance with her usual selfish policy, she made peace without having secured to Florence Lucca, the real object of the war. In 1346, in consequence of quarrels in the East, a third war sprang up with the rival republic of Genoa, in which Venice formed an alliance with Pedro IV. of Aragon and the Greek emperor. On Feb. 13, 1352, Paganino Doria with 64 galleys attacked the allied squadron of 78 vessels under command of Nicola Pisani. During the engagement, which took place in sight of Constantinople, a violent storm arose, and the losses on both sides were tremendous. The Venetians were finally worsted; but on Aug. 29, 1353, the defeat was amply revenged in a battle off the coast of Loiera in Sardinia, in which the naval power of Genoa was so thoroughly broken that she was obliged to seek the protection of Giovanni Visconti, lord of Milan. With his assistance the Genoese navy was reorganized, and Paganino Doria attacked and destroyed the Venetian fleet in the gulf of Sapienza in the Morea, Nov. 3, 1354. In 1355 the exhausted republic made peace. Disorder and calamity had done their work; the nobles were violent, the people were discontented, and the laws were unobserved, and the unsettled state of affairs was aggravated by the conspiracy of Marino Falieri. (See FALIERI.) In 1377 began the 4th and most desperate war with Genoa. Venice was surrounded by enemies, but in May, 1378, her fleet defeated the Genoese off Antium. Lucian Doria organized an armament for revenge, and entering the Adriatic the year following, met on May 29 the Venetian fleet off Pola, under command of Vettor Pisani, the greatest admiral the republic ever had. Doria was killed, but the Genoese gained a great victory. Pisani, who had fought the battle by express orders and against his own judgment, was thrown into prison. On Aug. 16 the Genoese fleet forced the port of Chioggia, 25 miles S. of Venice, thus leaving the canals open to the city. Never before had the republic been in such peril, never before had she asked for peace on terms so humiliating. Her offers were contemptuously rejected, however, by the Genoese, Louis the Great of Hungary, and the lord of Padua; and Pietro Doria declared that he would not make peace until he had bridled with his own hand the bronze horses in the square of St. Mark. The republic now fought with the determination of despair. Vettor Pisani was released and placed in command of the navy; Carlo Zeno was sent for with the fleet in the eastern seas; and in 1380 the Genoese were blockaded in the lagoon of Chioggia, and on June 24 were obliged to surrender at discretion. The following year peace was concluded between the rival cities. During the next 40 years Venice was employed in extending her possessions on the mainland, and in 1420 had established her power over a large portion of northern Italy from the Julian Alps to the Adige and Mincio. This was the period of her greatest prosperity. In 1423 the doge Tommaso Mocenigo said to the senators on his death bed: "I leave the country in peace and prosperity; our merchants have a capital of 10,000,000 golden ducats in circulation, upon which they make an annual profit of 4,000,000. I have reduced the public debt by 4,000,000 ducats. We have 45 galleys and 300 other ships of war; 3,000 merchant vessels, 52,000 sailors, 1,000 nobles with incomes varying from 700 to 4,000 ducats each; 8 naval officers fit to command a large fleet, 100 others fit to command large squadrons; many statesmen, jurisconsults, and other wise men." Under his successor Francesco Foscari war was carried on with Filippo Maria Visconti, duke of Milan, in which the Venetian armies were led, until his execution, by Carmagnola. In 1463 a war broke out with the Turks, which lasted with occasional interruptions until 1479, and in which the republic lost Eubœa, Lemnos, and part of the Morea; but they were in some measure compensated by the acquisition of Cyprus in 1489 by donation from Catharine Cornaro, widow of the last king, James II. Another war with the Turks followed, in which in 1499 Scander Pasha of Bosnia ravaged the country with fire and sword as far as the Tagliamento, and Lepanto, Pylos, Modon, and Coron were successively taken by the Turks, who began to be superior to the Venetians on the sea as well as on the land. In Nov. 1503, Venice made a humiliating treaty of peace with these enemies, only to suffer an attack from another quarter. On Dec. 10, 1508, the famous league of Cambrai, which was only the completion of the secret treaty of Blois of Sept. 22, 1504, was formed between Louis XII. of France and Maximilian I. of Germany, and was sanctioned by Pope Julius II., who was indignant that Venice would not restore a portion of the Papal States of which she had gained possession. It was also joined by Ferdinand of Aragon and some of the potentates of Italy. The Venetian territories were overrun by Spanish, French, German, and Swiss soldiers, though the city in its impregnable lagoon was saved. In 1516, disagreements and wars having broken out among the allies, a peace was concluded at Noyon, by which Venice recovered all her dominions on the mainland, excepting those in the Romagna; but her wealth was destroyed, her population reduced to one half, and her power irremediably shaken. The whole of the 16th century was spent by the republic in repairing the disasters inflicted upon it by the league, and at the same time it was called upon to carry on two wars against the Turks; the first lasting from 1537 to 1540, by which it lost its fortresses in the Morea, and its islands in the archipelago, retaining Candia; the second from 1570 to 1573, which ended with the fall of Cyprus. In 1618 occurred the conspiracy of the Spanish ambassador, the marquis of Bedmar, to destroy the republic by means of the adventurers employed in the Venetian service, who at a given signal were to massacre the doge, senators, and nobles, and pillage and fire the city. The feast of the Ascension was the day fixed upon; and every thing was in readiness, when one morning the bodies of many of the conspirators were found hanging in the square of St. Mark. The trial was kept a profound secret; no reasons were assigned for the execution, no explanations given to other powers, no complaints made to the Spanish court, whose ambassador was escorted out of the city. The terrible silence in which the council of ten veiled its proceedings was so well preserved, that the history of the conspiracy published by St. Réal in 1674, and Otway's tragedy of "Venice Preserved," published in 1682, were for a long time the only public documents relating to the matter. From 1645 to 1649 the republic was engaged in war with the Turks for the isle of Candia, in which their fleet twice destroyed that of their enemies. Candia was defended in vain, but so desperately that even now with them a "war of Candia" means a "war to the knife and the knife to the hilt." A second war between the republic and the Ottoman Porte lasted from 1682 to 1699, and ended in the conquest from the Turks of Ægina, Santa Maura, and several fortresses in the Morea; but a renewal of the war in 1714 deprived Venice of the Morea, and after the peace of Passarowitz in 1718 she had no further war with the Turks. Venice was now in a decaying condition. Her former spirit was fled; a large portion of the nobility were reduced to poverty; the finances were exhausted, and every thing was an object of embezzlement to the members of the oligarchical families, from whom were selected the council of ten. During the 18th century she took no part in the various wars which agitated Europe, and especially Italy, though she could not always make the neutrality of her territory respected. In the war between France and Austria in 1796 she continued this timid policy, but was surrendered to Bonaparte in 1797, and by the treaty of Campo Formio became a part of the Austrian empire. By the peace of Presburg in Dec. 1805, Venice was made a part of the kingdom of Italy, to which it was formally annexed by a decree of March, 1806. Napoleon left many marks of his reign in the public works he designed or constructed, although the constant blockade kept up by the English cruisers prevented any development of commerce. In 1814 Venice came again under the power of Austria, and formed a part of the Lombardo-Venetian kingdom erected by her in April, 1815, and from that time remained under her control without any attempt at rebellion until March, 1848, when the general revolutionary movement in Europe manifested itself in Venice. The city was evacuated by the Austrian garrison, and a provisional government was formed, of which Daniele Manin was president and minister of foreign affairs. This did not cease from its functions until Aug. 1849, when Venice capitulated to Marshal Radetzky, after having endured a siege of 15 months, the miseries of which were aggravated by the scarcity of food, by pestilence, and by the destitution of materials of defence. It still forms a part of the Austrian empire.—The constitutional history of Venice is distinct from that of all other Italian states. During its early period the power was vested in the people, who elected their doge. The latter exercised at first great authority, and until 1032 was not obliged to consult a council. In that year he designated such an assembly, selected from the most illustrious citizens, who were called *pregadi* (invited) from this circumstance. The frequent tumults and the constant disorders that prevailed led in 1172 to the formation of a grand council of 480 members, elected annually on Sept. 30, by 12 tribunes, two from each of the 6 districts of the city. Six minor councils (*signorie*) were soon after established, and with these was united, in the 12th century, the council of 40, originally a criminal court. The greatest influence, however, continued to be exercised by the grand council, which appointed the various magisterial officers of the republic. This moderately aristocratic form of government was altered in 1297 into an oligarchy by the doge Pietro Gradenigo, when a hereditary nobility, consisting of families whose names were entered in the "golden book," took the place of the annually elected members of the grand council. The establishment in 1310 of the council of ten, caused by the conspiracy of Tiepolo, completed the centralization of power in the hand of the oligarchy. The council of ten was almost absolute; the power of the doges, who, though elected for life, generally ruled but a few years on account of their age, was narrowly circumscribed and jealously watched, and that of the people was almost naught. The state inquisition, a secret tribunal of three, became about the middle of the 15th century the dreaded and terrible instrument of the justice and vengeance of the council of ten. Only nobles were appointed to offices. The provinces were governed by *proveditori*, the cities by podestas.—The archives of Venice are the most extensive in Europe, and have afforded materials for many important historical works, the latest of which is "History of the Venetian Republic, her Rise, Greatness, and Civilization," by W. C. Hazlitt (4 vols., London, 1860). The architectural antiquities of Venice and her artistic glories are depicted by the vivid pen and pencil of John Ruskin in his "Stones of Venice" (3 vols., London, 1853).

VENICE, Gulf of, the name given to the N. W. part of the Adriatic sea, where it forms an indentation in the coast of Austrian Italy (government of Venice), extending from the mouth of the Tagliamento to the delta of the Po, a distance of about 56 m.; its depth is not more than 12 m. It receives the waters of the Livenza, Piave, Brenta, Bacchiglione, Adige, Po di Levante, and Po della Maestra.

VENTIGNANO, Cesare Della Valle, duke of, an Italian author, born in Naples, Feb. 9, 1777. His literary career commenced with the publication in 1810 of "Vesuvius," a poem in 5 cantos, composed in his childhood; after which he produced "Lalage in the Studio of Canova" (1812), and a number of tragedies, including "Medea," "Hippolytus," "Iphigenia," "Lady Jane Grey," "Romeo and Juliet," and "Mohammed," subsequently called "The Siege of Corinth," and to which Rossini adapted music. In 1830 he took up the study of political economy, and during the next 12 years published a number of works on that subject. In 1843 he returned to poetry and belles-lettres, and became a voluminous writer of articles for the daily press. In 1848 appeared his "Essay on the Education of the Aristocracy and the Laboring Classes." He has also written 18 or 20 comedies, directed generally against the aristocratic order to which he belongs, and in 1851 published a complete edition of his lyrical poems. One of his latest works of importance is the "Philosophic View of the History of the Human Race" (1853).

VENTILATION. See Warming and Ventilation.

VENTRILOQUISM (Lat. *venter*, the belly, and *loquor*, to speak), a kind of vocal mimicry, by which an illusion is produced in the mind of the hearer in relation to the source or direction from which the sound proceeds. The name, or at least its cognate terms in Greek and Hebrew, originated from the practice of the witches and persons supposed to have a familiar spirit among the Phœnician nations and the Jews, and the diviners or prophesying priests and priestesses of the Greeks, causing the answers to the questions asked by those who consulted them to proceed apparently from the abdomen, in which, as they alleged, resided their familiar spirit or demon. The first attempts at ventriloquism were probably made in Egypt or India, in both of which countries it has been known from the earliest periods. That it was commonly practised in Egypt during the residence of the Israelites there is evident from the prohibitions of the Jewish lawgiver against it after the exodus, in Lev. xix. 31, and xx. 6, 27, and Deut. xviii. 10–14. The early inhabitants of Canaan had also practised it, as appears from the last passage named. In all these cases the term translated "having a familiar spirit," is literally "speaking from the belly." Notwithstanding the death penalty pronounced against it, the practice of divination or ventriloquism continued among the Jews, as the references to it in Isaiah and the other prophets fully demonstrate. Nor did it cease as a pretended means of revelation in the early centuries of the Christian era, as the case in Acts xvi. 16, the well known practice of gastromancy among the later Greeks, and the repeated references of St. Chrysostom and other of the early Christian fathers, sufficiently prove. Its use for such purposes was finally abandoned during the middle ages. In the early part of the 16th century Louis Brabant, valet de chambre of Francis I., employed it to secure the consent of the mother of his betrothed to his marriage with her daughter, and also to extort from a rich miser a large sum of money. In 1772 the abbé de la Chapelle published an account of two eminent ventriloquists, Baron Mengen at Vienna, and M. St. Gille near Paris, who were very successful in producing illusions by means of vocal mimicry, and causing the voices which they imitated to appear to come from different directions, as from trees, the earth, or the bodies of animals. These gentlemen made no secret of their performances, but attributed their skill to their fondness and talent for mimicry, which enabled them to imitate accurately all kinds of sounds. M. St. Gille displayed his skill before commissioners of the French academy of sciences, who investigated the subject with great care. Since that period the practice of ventriloquism has become common, and most of the so called magicians, wizards, and sleight-of-hand performers add it to their repertory of means for producing illusions. Thiernet, Borel, Fitzjames, Houdin, and Alexandre in France, and Charles Mathews and others in England, enjoyed a high reputation for their success in the practice of this art. M. Comte, a celebrated French ventriloquist, was the first to demonstrate the possibility of cultivating it by scientific methods, and several eminent singers have resorted to it to produce unusual musical effects. It was supposed for many years, and eminent physiologists gave countenance to the theory, that some peculiarity in the conformation of the larynx was requisite for ventriloquism, or at least that it was accomplished by processes essentially different from those adopted in ordinary speaking or singing; but it has been demonstrated that the vocal organs of the ventriloquist are the same as those of other men, nor is his use of them materially different from that of others. For success in the exercise of his art, he requires only keen perceptions, an ear delicately attuned to the variations of sound produced by distance or direction, and a strongly developed mimetic faculty. The vocal organs possess the power of imitating under skilful training all the sounds of animate or inanimate life, and in such a way as to represent them as heard at greater or less distances and from different directions. The ventriloquist is well aware that no one of our senses is more easily deceived than that of hearing, because in listening to sounds we judge of their remoteness by comparing them with other sounds whose distance we are familiar with, and determine their distance by an arbitrary and often incorrect estimate of their relative volume at the place of their supposed emission; a standard which must often be faulty. Aware of this, he utters the sound with the effect it would have upon the hearer's ear if it had really traversed the distance he designs it to represent, reducing its loudness, softening somewhat its quality or tone, and, if it is in words, obscuring a little the consonant sounds, while retaining unaltered the pitch and duration. In doing this, he modifies the tones of his voice by varying the position of the tongue and the soft palate, dilating or contracting the mouth or pharynx, and either dividing the buccal and pharyngeal cavities into several compartments or throwing them into one. This is done without movement of the lower jaw and with but slight motions of the lips, while by means of skilful and apparently natural gestures the attention of the hearer is diverted from the ventriloquist himself to the point from which the voice or sound is supposed to proceed. Usually the ventriloquist stands so as to give only a profile view of his face, unless at a distance from his audience, and thus has greater opportunity of concealing any slight motions of the facial muscles. In most cases, too, the apparently remote voice is a falsetto, this being more within the command of the performer, without perceptible facial movement, than the natural tones. The exercise of ventriloquism for any considerable time is fatiguing, and occasions frequent coughing on the part of the operator. (See VOICE.)

VENTURA, G. D. GIOACHINO, an Italian orator and theologian, born in Palermo, Dec. 8, 1792, died in Versailles, Aug. 3, 1861. At the age of 15 he entered the Jesuit college of his native city; and when that establishment ceased to exist, he was received as a novice by the Theatines. Having been admitted to holy orders, he entered with great success upon the career of preaching. He became general secretary of the order, contributed largely to its restoration, and published *La causa dei regolari al tribunale del buon senso*, which displayed great aptitude for polemical discussion. Subsequently he was named censor of the press and member of the royal council of public instruction for the kingdom of Naples, and in this position used his influence to introduce into Italy the new Catholic philosophy of France. He continued his clerical functions, and became especially distinguished for his funeral orations, one of which, a panegyric on Pius VII., passed through 20 editions and gained him the name of the Italian Bossuet. In 1824 he was appointed general of the order of the Theatines, and fixed his residence at Rome, where he was made a member of a commission of censorship, and at the same time was presented to the chair of ecclesiastical law in the university of Rome, and soon after made almoner of the same institution. He took a prominent part in public affairs, and negotiated the concordat between Leo XII. and the duke of Modena; effected a reconciliation between the pope and the French ambassador, Châteaubriand, whom the pontiff was unwilling to recognize; and secured from the papal court the recognition of Louis Philippe as king of France *de facto*, though not *de jure*. In 1828 he published his work *De Methodo Philosophandi*, in defence of the Christian or scholastic philosophy. This was bitterly attacked by his old friend, the abbé Lamennais; and, wearied of the calumnies and controversies which ensued, Ventura quitted the pontifical court, and spent 10 years in retirement, devoting himself to the study of the Scriptures and the fathers of the church. In 1839 appeared his work on "The Beauty of the Faith" (3 vols. 8vo.), and also a *Bibliotheca Parva*, containing extracts from the fathers and the sacred poets. During this period also he preached his finest sermons in the church of S. Andrea della Valle and at St. Peter's, and his published homilies fill 5 vols. 8vo. In 1847 he preached the funeral sermon of O'Connell, the liberal opinions advanced in which gave him great influence with the people. At the beginning of 1848 the popular government of Sicily made him minister plenipotentiary and commissioner extraordinary to the court of Rome, and with the assent of the pope he accepted the office. Occupying himself with the affairs of Sicily and Rome, he published a treatise "On the Independence of Sicily," another "On the Legitimacy of the Acts of the Sicilian Parliament," and subsequently an octavo volume, entitled *Mensonges diplomatiques.* In May, 1848, he favored the idea of a confederation of the Italian states with the pope at their head; a scheme supported by many prominent Italians, but prevented from being carried into effect by several causes. After the flight of Pius IX. he remained at Rome, and was offered the presidency of the constituent assembly, which he declined. Though disbelieving in the durability of the Roman republic, he was strongly opposed to the attack of Gen. Oudinot. On May 4 he left the city and retired under the protection of the French to Civita Vecchia, and afterward to Montpellier in France. Here, finding that the opinions advanced by him in a funeral sermon on those who had fallen in the defence of Vienna had been condemned by a decree of the congregation of the Index, he retracted the offensive passages. At Montpellier he wrote "Letters to a Protestant Minister" (12mo., 1849), in answer to a clergyman of Geneva, who maintained that the apostle Peter had never been in Rome. In that place he remained two years, preaching in the French language, and then went to Paris, where his reputation had preceded him. Here he drew crowds to the churches of the Madeleine and St. Louis d'Antin by the eloquence and originality of his discourses. At Paris also he published *Histoire de Virginie Bruni* (12mo., 1850); *Les femmes de l'Évangile* (12mo., 1853); *La raison philosophique et la raison catholique* (8vo., 1852); *Essai sur l'origine des idées* (8vo., 1853); *La femme catholique* (3 vols. 8vo., 1854); *L'école des miracles, ou les œuvres de la puissance et de la grandeur de Jésus Christ* (2 vols. 18mo., 1854-'5); and *Le pouvoir Chrêtien* (8vo., 1857).

VENUS, in mythology. See APHRODITE.

VENUS, THE PLANET. See ASTRONOMY.

VENUS DE' MEDICI, the name applied to a celebrated antique statue of Venus now in the Tribune at Florence. It was exhumed at the villa of Hadrian near Tivoli in the 17th century, in 11 pieces, and after remaining for some time in the Medici palace at Rome, whence it took its name, was about 1680 carried by Cosmo III. to Florence, where, with the exception of the period between 1796 and 1815, when it was deposited in the Louvre at Paris, it has since remained. It is a nude statue, 4 feet 11½ inches in height without the plinth, and from its exquisite proportions and perfection of contour has become the most celebrated standard of female form extant. The face has little expression and not much beauty, the value of the work consisting almost entirely in its proportions. It is antique with the exception of the right arm and the lower half of the left arm, restored by Bandinelli, and some small piecings in other parts of the body. The left leg of the statue is supported by a dolphin, on which are seated two cupids called Eros and Anteros. The plinth is modern, and contains an inscription copied from the old one, recording the name and country of the artist who made the statue, Cleomenes, the Athenian, the son of Apollodorus. He flourished between 200 and 150 B. C., and in designing his statue probably had in view the Cnidian Venus of Praxiteles, although the Venus de' Medici is in no respect a copy of that work, as has been asserted by Winckelmann and other critics.—The Venus of Milo, so called from the island of Milo (the ancient Melos), where it was discovered in 1820, is supposed to be a copy of the Venus of Cos by Praxiteles. It was purchased in 1834 for the Louvre, in which it is now deposited.

VENUS'S FLY-TRAP. See DIONÆA.

VERA CRUZ, a state of Mexico, bounded by San Luis Potosi, Tamaulipas, the gulf of Mexico, Tehuantepec, Oajaca, Puebla, and Mexico; extreme length 450 m., breadth 100 m.; area, 26,493 sq. m.; pop. in 1857, 338,859. The coast is low and sandy, and has several lagoons, the largest of which is the lake of Tamiagua in the N., 55 m. long by 20 broad. After the sandy tract upon the coast is passed, the surface begins gradually to rise into a rich table land, and about the W. and S. W. it becomes mountainous, the peak of Orizaba attaining a height of 17,907 feet above the sea, and that of Coffre de Perote 14,008 feet. There are numerous streams, but the rivers are of little importance for navigation, as their mouths are obstructed by sand bars. The climate of the low tract on the coast is unhealthy, and from May till November yellow fever is prevalent; but in the more elevated districts it is agreeable and salubrious. Mines of the precious metals are worked in the mountains. There are large tracts of arable land in the interior, excellent pastures, and forests which, according to elevation, contain trees and plants that range through the whole scale from tropical to arctic vegetation. Wheat, maize, barley, coffee, sugar, cotton, tobacco, sarsaparilla, vanilla, pineapples, bananas, oranges, and many fruits and vegetables common in both tropical and temperate regions, are produced in great abundance. Dye woods and much valuable timber are procured in the forests. Horses, horned cattle, and sheep are very numerous.—Vera Cruz, or Villa Rica de la Vera Cruz, the capital, is situated on a marshy plain on the shore of the gulf of Mexico, in lat. 19° 11′ 54″ N., long. 96° 8′ 36″ W., 190 m. E. S. E. from Mexico; pop. in 1854, 9,647. It is built in a semicircle fronting the sea, and is enclosed by a wall 6 feet high and 3 feet thick, and defended by 2 redoubts on the shore and the strong castle of San Juan de Ulloa, which stands upon the island of the same name about half a mile from the shore. There are several squares, and the streets are regular and clean. The houses are well built of coral limestone, generally with flat roofs and some of them 3 stories high, in the old Spanish style, enclosing a square court with covered galleries. Only 6 churches are now in use, but 10 others and several monasteries are standing, though in a dilapidated state. The harbor is exceedingly insecure, and is merely a roadstead between the town and the castle. The anchorage is so bad that vessels are not considered safe unless made fast to rings fixed for the purpose in the castle walls; but the N. gales are sometimes so heavy that even this precaution is not sufficient to prevent ships from being driven ashore. The surrounding country is completely barren, and there is not a garden nor any appearance of vegetation near the town. Water is found about 9 feet below the surface, but it is unwholesome, and drinking water is only procured from the roofs of the houses during the rainy season and preserved in tanks for use. The climate is almost pestilential; from May till November yellow fever is always present, and the stagnant water of several small lakes and marshes occasions intermittent fevers. The principal exports are the precious metals, cochineal, sugar, flour, indigo, provisions, sarsaparilla, leather, vanilla, jalap, soap, logwood, and pimento; and the imports cotton, woollen, linen, and silk goods, brandy, iron, steel, wax, quicksilver, paper, hardware and cutlery, earthenware, &c. The total commerce of Vera Cruz increased from about $14,500,000 in 1830 to nearly $27,000,000 in 1856, since which it has considerably declined. The imports in 1856 amounted to $17,720,582, of which $6,703,208 were from Great Britain, $4,966,295 from France, and $2,444,805 from the United States; and the exports amounted to $8,942,988, of which about $8,000,000 consisted of the precious metals.—Vera Cruz is the spot where Cortes first landed. The town was founded toward the end of the 16th century, and received the title and privileges of a city from Philip III. in 1615. When the foreign trade of Mexico was carried on by the *flota* which sailed from Cadiz at stated periods, a fair was held at Vera Cruz upon the arrival of the ships, and the place was then crowded with merchants and dealers from Mexico and other parts of Spanish America; but this system was abolished in 1778. Previous to the revolution, the population was about 20,000, and the town was one of the most important places in the Spanish possessions; but the inconvenience of the port, the unhealthiness of the climate, and bad water have caused it to decline, and a good deal of the trade has been attracted to Tampico. The castle of San Juan de Ulloa was the last foothold of the Spaniards on the American continent, and surrendered to the patriots in 1825 after a long siege. It was bombarded and captured by the French in 1829, but was shortly afterward restored to the Mexicans. Both the city and castle were invested by the United States forces under Gen. Scott in 1847, and capitulated after being bombarded for 5 days. They also surrendered without resistance to the allied British, French, and Spanish fleet in Dec. 1861.

VERATRINE, or Veratria, a vegetable alkaloid, of composition represented by the formula $C_{64}H_{52}N_2O_{16}$, obtained from the roots and seeds of different species of the plant *veratrum*. (See Hellebore.) It was discovered in 1818 by Meissner, and the next year was separated by Pelletier and Caventou from cevadilla, the seeds of the *veratrum sabadilla*. This and other Mexican plants of kindred nature supply the cevadilla, which is still depended upon as the source of the veratrine used in medicine. In this it occurs united with veratric acid ($C_{18}H_{10}O_8$), and the alkaloid is also found combined with gallic acid, and in the *veratrum album* or white hellebore it is associated with 3 other poisonous bases, *sabadillia*, *colchicia*, and *jervia*; the last of which, represented by $C_{60}H_{45}N_2O_5$, 4Aq, is white, crystalline, and fusible. Veratrine is uncrystallizable, except in its salts produced by combination with some of the acids. When pure it is white, easily pulverized, and without odor, but produces long continued and dangerous fits of sneezing by contact of a very minute quantity with the mucous membrane of the nose. It is bitter and acrid, and dissolves in boiling water, and freely in alcohol, but scarcely at all in cold water, and with difficulty in ether. Its solutions have an alkaline reaction in restoring the blue color of reddened litmus, and when evaporated deposit the veratrine in transparent laminæ. At a moderate heat veratrine fuses, and at a red heat is entirely dissipated.—The pharmacopœias give different methods of preparing veratrine, but that employed by Mr. James Beatson of the U. S. naval laboratory at New York is recommended as a simple and satisfactory process. By this method 73 lbs. avoirdupois of cevadilla are separated from the capsules by rubbing upon a coarse wire sieve, and are then reduced to a coarse powder in a drug mill. The capsules are also ground, and the finer portion is mixed with the ground seeds. The mixture, moistened with alcohol, is left to stand 12 hours, and is then introduced into a displacement apparatus, and 30 gallons of alcohol are poured upon it. The liquid as it passes through is distilled and returned to the displacement apparatus until the cevadilla is thoroughly exhausted. The alcoholic liquor is further distilled until the tincture has a sirupy consistence. This while hot is poured into 8 times its volume of cold water, and the whole is thrown on a calico filter and washed until the washings cease to indicate the presence of veratrine. The washings are then mixed with what first passed through the filter, and about 4 lbs. of aqua ammonia are added. The precipitated veratrine is then washed with cold water and dried at a very gentle heat. By this process 73 lbs. of cevadilla have produced 11¼ oz. of pure veratrine, only slightly tinged with coloring matter.—Veratrine has a powerfully irritating action upon the system, especially when applied upon spots denuded of the cutis, or when it reaches the mucous membrane. Its use as a medicine depends on its peculiar influence upon the nervous system. Applied externally, either in its alcoholic solution or in an ointment of lard containing 20 grains or more to the ounce, it is found to have a most beneficial effect in cases of gout, rheumatism, and neuralgia. It is also administered internally in dropsy, diseases of the heart, and various nervous affections, as paralysis, whooping cough, epilepsy, hysteria, and disorders arising from spinal irritation. The tartrate, sulphate, and acetate, used internally, are prepared by neutralizing the veratrine with a weak solution of the acid, and evaporating to dryness. In large doses veratrine is a violent poison. It has no narcotic effects.

VERB. See Language, vol. x. p. 295.

VERBENA, a classical word of uncertain etymology, applied by the ancients to any herb used for religious purposes, but now familiar in floriculture as designating a genus of ornamental plants with vivid-colored flowers, forming the type of the natural order *verbenaceæ*. For a long time the verbenas, also called vervains, were only known as composing a genus of weeds, 2 or 3 species being exceptions. About 30 years since the *verbena melindres*, a low, creeping plant, sending out rootlets at every joint, and having opposite, crenate-edged leaves, was introduced from Brazil, and soon became a favorite. Shortly afterward the *V. Tweediana*, of freer growth and more upright habit, larger umbels, florets more profuse and of a less vivid scarlet color, became known. New varieties of various-colored blossoms were raised from seeds of South American species, bearing the same general type. A coarser and taller kind, with pure white and fragrant flowers in narrow-pointed spikes, was designated *V. teucrioides;* and from this sub-varieties were raised, all distinguished for their fragrance. Innumerable hybrids and sub-varieties have been produced by cultivation, extinguishing in gardens the old and original kinds. Florists have also brought the character and shape of the flowers to great artistic perfection, and originated every shade of color in scarlet, orange-scarlet, crimson, purple, rosy, lavender, bluish lilac, white, and even striped. A perfect verbena should exhibit as many as 7 florets arranged in the form of a corymb; the centre or eye of each floret should be prominent, if possible of a distinct tint of white or yellowish, the edges of the floret large, round, and free from indentations, the corolla either dense or bright in hue. Verbenas are used chiefly for planting in large masses or in long belts, after a mode technically called "bedding," in order to produce striking effect by a uniform color or by well contrasted tints. Their culture is simple, requiring full exposed situations, free air and sun, and a light friable soil; they grow readily from seeds, layers, or cuttings.—Some very remarkable species, such as the leafless, the broom-like, and the hedgehog verbena (*V. aphylla*, *scoparia*, and *erinacea*), are described among 24 species by Dr. Gillies in Hooker's "Botanical Miscellany," vol. i., as found by him in the extra-tropical parts of South America. The genus indeed seems to abound in that country, Sprengel mentioning 32 as indigenous, and Gillies 18 species never before noticed. Two distinct species found in the western United States are very pretty and well adapted to the flower border, viz.: the *V. Aubletia* (Linn.), with spikes of showy purple flowers, and cleft or pinnatifid leaves, and the *V. bracteosa* (Mx.), with smaller purple flowers, springing from the axils of large leafy bracts. The same character of deeply divided foliage belongs to several foreign garden species and varieties. The common vervain (*V. officinalis*, Linn.) occurs sparingly by roadsides in the United States, being adventitious from Europe; it was once of medical repute, but is now useless.—The natural order *verbenaceæ* comprises a number of distinct genera of herbs, shrubs, and even trees, with opposite leaves, the flowers very seldom axillary and solitary, their corollas irregular, stamens usually 4, didynamous, and the fruit nut-like or berry-like, composed of 2 to 4 nucules adhering to each other laterally. The species mostly abound in the tropics of both hemispheres, becoming shrubs or even large timber trees, of which the teak (*tectona grandis*) may be cited as an example. Some of the order possess reputed medical properties, the bark of *callicarpa lanata* being considered diuretic among the Malays. A species of *stachytarpheta* is used in Brazil in infusion for tea, and the expressed juice of its leaves is a cooling purgative and an anthelmintic. The aromatic foliage of various lantanas are esteemed, and their berries are edible. The leaves of the teak tree supply a red dye.

VERBOECKHOVEN, Eugène, a Belgian painter, born in Warneton, West Flanders, in 1799. He early devoted himself especially to animal painting. He has also painted portraits with success, including those of Horace Vernet and Solyman Pasha, and of late years has attempted sculpture. Creditable specimens of his animal pieces are owned in New York.—Charles Louis, brother of the preceding, born in Warneton in 1802, studied with his brother, and at first also devoted himself to animal painting, but soon exchanged it for sea pieces.

VERCELLI (anc. *Vercellæ*), a town of Piedmont, Italy, in the province of Novara, formerly capital of a province of its own name, situated near the right bank of the Sesia, on the railway from Turin to Milan, 39 m. N. E. from Turin; pop. about 20,000. It is surrounded by boulevards which occupy the site of ancient ramparts. The cathedral, built in the 16th century, is one of the finest in N. Italy. Silk, linen, and cotton goods, hardware, jewelry, porcelain and earthenware, leather, and cordage are manufactured. Vercelli was an important town in the time of the Romans, but afterward suffered severely from the northern invaders. It recovered under the Lombards, and was superior to Turin till the residence of the court was fixed at the latter city. Vercelli is the see of an archbishop.

VERD, Cape. See Cape Verd.

VERDI, Giuseppe, an Italian composer, born at Roncola, a village in the duchy of Parma, Oct. 9, 1814. His father was an innkeeper, and his first instructions in music were given him by an obscure organist. His early evidences of unusual talent caused him to be put under the guidance of the musician Lavigna, who in 1833 was director of La Scala at Milan. Having studied operatic composition for 6 years, Verdi produced in 1839 his first work, *Oberto di San Bonifazio*, which met with moderate success. His next effort was a comic opera, hastily written to order in 1841, called *Un giorno di regno*, and this was a positive failure. In 1842 he made a third trial, and presented *Nabucco*, which instantly established his fame. In this work he developed those characteristics of brilliant melody and vivid musico-dramatic effects which have maintained his popularity undiminished to the present time. In 1843 he produced *I Lombardi*, a work of similar musical character to *Nabucco*, though somewhat more finished in detail. During the season of 1844–'5 he wrote three grand operas, *Ernani*, *I due Foscari*, and *Giovanna d'Arco*. Up to a recent period *Ernani* has been the most popular of his works. Its qualities are extreme vigor and brilliancy of melody, without floridity, strongly marked melodramatic effects, and very resonant orchestration. The above named operas were all produced at La Scala. At Naples he presented *Alzira* (1845), which failed, and *Attila* (1846), which was completely successful. At Florence, in 1847, *Macbeth* secured for the composer the most overwhelming popular tributes he had ever received. He was called before the audience more than 30 times at each of the first three performances, escorted to and from the theatre by triumphal processions, and offered the testimonial of a golden crown. This, however, was not exclusively an artistic laudation. Verdi had already been recognized as an ardent sympathizer with the liberal politicians of Italy, and the libretto of *Macbeth* was full of allusions to which the populace attached a political significance. In 1847 Verdi also visited London, and there produced *I masnadieri*, in the representation of which Jenny Lind took the principal part. In the same year his *Lombardi* was given, with French words, at the grand opera in Paris, the composer's first introduction to the French public. In 1848 he wrote for Trieste *Il corsaro*, which failed, and for Rome *La battaglia di Legnano*, which was interdicted on account of the political bearing of the story. In 1849 he wrote for Naples *Luisa Miller;* in 1850, for Trieste, *Stiffelio;* in 1851, for Venice, *Rigoletto*, which he himself regards as his masterpiece, although the opinion is disputed by many of his warmest admirers; in 1853, for Rome, *Il trovatore;* and in the same year, for Venice, *La traviata*. In 1855 *Les vêpres Siciliennes* was produced at the grand opera in Paris; and *Un ballo in maschera* was first represented in 1859 at Rome. He has also written *Aroldo*, *Simone Boccanegra*, *Una vendetta in domino*, and *Le roi Lear;* and his last work, *La forza del destino*, is now (1862) about to be produced for the first time. He composed for the international exhibition at London in 1862 a cantata, which was rejected by the commissioners, but afterward performed at her majesty's theatre. In 1859 Verdi was a member of the national assembly of Parma which voted for annexation to Sardinia, and in 1861 was elected a deputy in the Italian parliament.

VERDIGRIS. See Copper, vol. v. p. 682.

VERDUN, a town of France, department of Meuse, situated on the river Meuse, 30 m. N. N. E. from Bar-le-Duc; pop. in 1856, 10,596. It is strongly fortified, and defended by a citadel. The river separates into 5 streams within the walls, and again unites on leaving the town. There are manufactures of woollen and cotton goods, leather, liqueurs, and sugar plums. By a treaty concluded here in 843 the sons of Louis le Débonnaire divided the empire of Charlemagne. During the war between France and Great Britain in the early part of the present century, Verdun was used as a place of restraint for English *détenus*.

VERGENNES, a city of Addison co., Vt., situated on Otter Creek, 21 m. S. by E. from Burlington; pop. in 1860, 1,286. The falls of Otter Creek at this place afford a large amount of hydraulic power, which is partially improved. The harbor is an excellent one, affording a sufficient depth of water for the largest vessels. It was an important naval depot during the war of 1812, and Com. McDonough's fleet was fitted out here. A United States arsenal, the only government military establishment, is still maintained here, and the government property is valued at about $107,000. There are 3 churches, 4 schools, a newspaper office, and a bank with a capital of $100,000. The city was first settled in 1766, and incorporated in 1788. It is the only city in Vermont. Its area is only 380 by 400 rods.

VERGENNES, Charles Gravier, count de, a French statesman born in Dijon, Dec. 28, 1717, died Feb. 13, 1787. In 1750 he was appointed French minister at the electoral court of Treves, and in 1775 ambassador to Constantinople. He succeeded in baffling there the intrigues of England and Prussia against his own country, and in keeping the Porte in a state of neutrality during the 7 years' war. In 1768, under the advice of Choiseul, he prevailed upon the sultan to declare war against Russia, but about this time he was recalled upon some frivolous pretence. He spent two years in retirement on his estates in Burgundy, and after the fall of Choiseul became ambassador to Sweden (1771), where he is said to have assisted Gustavus III. in the revolution that made him an absolute sovereign. On the accession of Louis XVI. (1774) he was made minister of foreign affairs. By the treaty of Soleure (1777) he secured an alliance with all the cantons of Switzerland; then negotiated and settled the much more important treaties of commerce (Dec. 8, 1777) and of alliance (Feb. 6, 1778) with the United States of America; and when the fortune of war had decided the question of American independence, he was instrumental in negotiations which ended in the peace of Versailles, Nov. 30, 1782, and Jan. 20, 1783. He had meanwhile interfered in the affairs concerning the succession of Bavaria, and aided in bringing about the pacification of Teschen (1779); and he reconciled the difficulties that had sprung up between the emperor Joseph II. and the Netherlands by the treaty of Fontainebleau, Nov. 10, 1785. As chairman of the council of finance, he gave particular attention to manufactures and commerce, and concluded a treaty with England in 1786, which greatly lessened the duties on imports.

VERGIL, Polydore, an English historian, born in Urbino, Italy, about 1470, died there in 1555. Being in holy orders, he was sent to England in 1501 by Pope Alexander VI. as collector of the tax called Peter's pence, which office he was the last to hold; and he remained in England many years after his functions as collector had been discontinued. Soon after his arrival he obtained the rectory of Church-Langton in Leicestershire, and he was made archdeacon of Wells in 1507, and a prebendary successively in the cathedrals of Hereford and Lincoln. The latter prebend he exchanged in 1513 for one in St. Paul's. When he had been nearly 50 years in England, he "desired leave to go nearer the sun," which was granted; and he returned to Italy with a present of 300 crowns, and leave to hold his archdeaconary of Wells and his prebend at Hereford during life. His principal work is his *Historia Anglica* (1533), a history of England from the earliest time to the end of the reign of Henry VII. Two portions of an old English version of it have been printed by the Camden society. He also published a collection of *Adagia* or proverbs (1488); a work *De Rerum Inventoribus* (1499); 3 books of dialogues against divination, entitled *De Prodigiis* (Basel, 1531); treatises *De Patientia*, *De Vita Perfecta*, and *De Mendaciis*, &c. Certain passages in his *De Rerum Inventoribus* were placed on the Index at Rome.

VERGNIAUD, Pierre Victurnien, a French orator and revolutionist, born in Limoges, May 31, 1759, executed in Paris, Oct. 31, 1793. He was educated at Paris, and in 1781 entered the legal profession at Bordeaux. In 1791 he was sent as a deputy to the legislative assembly, and he soon took a conspicuous part there, in conjunction with those who wished to establish a republic. He advocated the declaration of war against Austria and severe measures against emigrants; when the so called "Girondist ministry" was dismissed, he supported the disbanding of the constitutional guard of Louis XVI., and the formation of an army in the vicinity of Paris; he contributed in bringing about the popular manifestation of June 20, 1792, and did not oppose the more formidable insurrection of Aug. 10. Being reëlected to the convention, he opposed the *montagnards*, and insisted vainly that the authors of the massacres of September should be punished. When the king was arraigned before the convention, he delivered an eloquent speech in favor of allowing him an appeal to the people, in case of a capital conviction. He finally voted for his execution, and as president pronounced the sentence. When the convention ordered the arrest of the Girondists, May 31 and June 2, 1793, he concealed himself, but was discovered and taken to the Luxembourg prison. He appeared with his friends before the revolutionary tribunal, Oct. 24, and delivered an eloquent vindication of himself and his party, but was nevertheless condemned to the guillotine, and went to the scaffold with 21 of his colleagues singing the *Marseillaise*. His most important speeches are found in *Choix de rapports, opinions et discours*, published by Lallemant (24 vols. 8vo., Paris, 1818-'25).

VERMICELLI. See Macaroni.

VERMIGLI, Pietro Martire, commonly called Peter Martyr, an Italian reformer, born in Florence in 1500, died in Zürich in 1562. At an early age he entered the order of regular canons of St. Augustine, and by his learning and eloquence soon became famous throughout Italy. Becoming acquainted with a Protestant convert at Naples, he was led to adopt the views of the reformers, but for some time concealed the fact. Having, however, been sent to Lucca as prior of San Frediano, he there made a public confession of faith, was in 1542 compelled to fly to Switzerland, and was soon after made professor of divinity at Strasbourg. In 1547 he accompanied Bucer, Fagius, and other reformers to England on the invitation of Cranmer, and was appointed by Edward VI. lecturer upon the Holy Scriptures at Oxford. On the accession of Queen Mary he returned to Strasbourg, where he received his former professorship, as well as that of Aristotelian philosophy. In 1556 he went to Zürich to assume the position of professor of theology in the university. He was present in 1561 at the famous conference between the Catholics and Protestants at Poissy in France. Peter Martyr was one of the most learned men of the reformed church, and was the author of many works, among which were epistles to "his Brethren of the Protestant Church of Lucca," to the Protestant churches in Poland, to Calvin, Bullinger, Beza, Melanchthon, Queen Elizabeth, and others. He likewise wrote commentaries on various parts of the Scriptures and on Christian ethics. Several of his works in Latin and English were printed in the 16th century in England, the last in 1583, dedicated to Queen Elizabeth, under the title of "The Commonplaces of the most famous and renowned Divine Doctor Peter Martyr, divided into four principal Parts by Anthony Marten."

VERMILION. See Cinnabar.

VERMILION. I. A S. W. parish of La., bordering on the gulf of Mexico, and intersected by the Vermilion and Mermenteau rivers; area, about 1,850 sq. m.; pop. in 1860, 5,357, of whom 1,316 were slaves. The surface is level prairie, and in many places marshy. The productions in 1850 were 46,061 bushels of Indian corn, 871 hogsheads of sugar, and 31,720 gallons of molasses. There was 1 church, and 314 pupils attending the public schools. The Vermilion river is navigable for steamboats. Capital, Vermilion Court House. II. A W. co. of Ind., bordering on Ill., bounded E. by the Wabash, and intersected by Vermilion river; area, 290 sq. m.; pop. in 1860, 9,423. The surface is generally level and the soil highly fertile, a large portion of the county consisting of beautiful prairie land. The productions in 1850 were 701,770 bushels of Indian corn, 45,144 of wheat, 90,711 of oats, and 2,829 tons of hay. There were 17 churches, and 550 pupils attending public schools. Iron ore and bituminous coal abound. Capital, Newport. III. An E. co. of Ill., bordering on Ind., drained by the Vermilion and Little Vermilion rivers and their affluents; area, about 1,200 sq. m.; pop. in 1860, 19,801. The surface is level and the soil very fertile. The productions in 1850 were 1,475,195 bushels of Indian corn, 46,301 of wheat, 168,976 of oats, 178,586 lbs. of butter, 23,990 of maple sugar, 59,938 of wool, and 5,545 tons of hay. There were 25 churches, 2 newspaper offices, and 70 pupils attending public schools. Bituminous coal is found along the banks of the Vermilion river. The county is intersected by the Toledo, Wabash, and Western railroad. Capital, Danville.

VERMONT, so called from its principal range of mountains (Fr. *verd* or *vert*, green, and *mont*, mountain), one of the north-eastern or New England states of the American Union, and the first admitted under the federal constitution. It lies between lat. 42° 44′ and 45° N. and long. 71° 33′ and 73° 25′ W., and is bounded N. by Lower Canada, E. by New Hampshire, from which it is separated by the Connecticut river, S. by Massachusetts, and W. by New York and Lake Champlain, of which nearly ⅔ lies within the state; area 9,056½ sq. m., or 5,795,960 acres. It is divided into 14 counties, viz.: Addison, Bennington, Caledonia, Chittenden, Essex, Franklin, Grand Isle, Lamoille, Orange, Orleans, Rutland, Washington, Windham, and Windsor. It has but one incorporated city, Vergennes, Addison co. The principal towns are Burlington, Rutland, Windsor, Brattleborough, Bennington, St. Johnsbury, Montpelier, St. Albans, and Middlebury. Montpelier is the capital. The population, according to the decennial censuses, has been as follows:

Census.	Population.	Increase.	Percentage of increase.
1790..........	85,416	....	....
1800..........	154,465	69,049	80.84
1810..........	217,713	63,248	40.95
1820..........	235,764	18,051	8.29
1830..........	280,652	44,888	19.04
1840..........	291,948	11,296	4.02
1850..........	314,120	22,172	07.59
1860..........	315,116	996	0.32

Of the 314,120 inhabitants of the state in 1850, 718 were colored; 232,086 were born in the state, 48,880 in other states, and 32,831 in foreign countries, or less than 10.5 per cent. of the whole; 145,665 persons born in the state were residing in other states; and of those from foreign countries, 15,377 were born in Ireland, 2,648 in England, Scotland, and Wales, and 14,470 in British America, while only 336 were from all other foreign countries. There were 3,654 paupers receiving aid, of whom 1,611 were foreigners; 147 deaf and dumb, 139 blind, and 297 idiotic.—The surface of the state is greatly diversified by hills and valleys, gentle acclivities, elevated plateaus, and mountains of considerable height. The Green mountain range extends through the state from its S. line in a northerly direction to the vicinity of lat. 44°, where it divides into two chains, one of which continues N. by E. to the Canada line, while the other turning N. E. extends to the New Hampshire line, where it joins that of Canada. (See Green Mountains.) These mountains are not generally granitic, and their rounded grassy summits in general offer a striking contrast to the lofty, bare, and jagged peaks of the White mountains. There are considerable quantities of cultivated lands at an elevation of 2,000 to 2,500 feet above tide water.—The eastern part of the state is drained by the affluents of the Connecticut, which traverses its entire E. line; the principal of these are the Deerfield, West, Black, Queechy, White, and Passumpsic rivers. The streams on the W. side of the state discharge their waters into Lake Champlain; the most important are Otter Creek, Winooski or Onion river, a beautiful stream with abundant water power, and the Lamoille and Missisquoi rivers. Two or three small streams fall into Lake Memphremagog, the southern part of which is in the state. Beside this and Lake Champlain, there are numerous small lakes, the principal of which are Lakes Willoughby, Maidstone, Seymour, Dunmore, Austin, and Bombazine. Long pond, or as it is now commonly called "Runaway pond," was formerly situated on the summit of a hill in the towns of Glover and Greensborough, and was one of the sources of the Lamoille river. In June, 1810, an attempt was made to open an outlet from it to Barton river on the north, when the whole waters of the pond, which was 1½ m. long and ½ m. wide, tore their way through the quicksand, which was only separated by a thin stratum of clay from the pond, and advanced in a wall from 60 to 70 feet high and 20 rods wide, carrying before them mills, houses, barns, fences, forests, cattle, horses, and sheep, levelling the hills and filling up the valleys, till they reached Lake Memphremagog, 27 m. distant, in about 6 hours from the time they left the pond. The inhabitants had just sufficient notice to escape with their lives. A small brook now flows through the valley formerly occupied by the pond, and a farm occupies a part of its ancient bed. There are a number of islands in Lake Champlain and one or two in Lake Memphremagog belonging to the state; the largest are North and South Hero and Isle la Motte in Lake Champlain, which with the peninsula of Alburg constitute Grand Isle co. The only considerable harbor is that of Burlington, on Lake Champlain, which is a very commodious one, and protected by a breakwater. It is a port of entry, and the point of a considerable trade with Canada.—The geological formations of Vermont consist chiefly of the lower groups of the geological column comprised in the azoic and silurian divisions. The devonian formation is represented by a band of limestone about a mile wide and 20 or 30 miles long on the E. side of the Green mountains. The drift formation overspreads the whole state, and alluvial deposits of limited extent are met with along the banks of the rivers. The lower formations are all of uncertain age, owing to the metamorphic character of the rocks, their doubtful stratigraphical relations, and their dearth of fossils. Their determination has for several years past been an interesting subject of investigation by the geologists of the United States, Canada, and Europe. The Green mountain range passes through the state N. and S., the mass of these mountains lying nearer the western than the eastern boundary, and is composed chiefly of gneiss, which may be the oldest rock in the state, or may prove to be of silurian or devonian age, or both in a metamorphic condition. Should this prove to be anticlinal in its structure, the group will then pass on each side under rocks of later age; but if its structure is synclinal, it then overlies the rocks on either side; so far it has been found impracticable to determine this question. The most extensive investigations have been lately made by Messrs. Edward Hitchcock, sr., Edward Hitchcock, jr., Charles H. Hitchcock, and Albert D. Hager, the results of which were published in 1861 in 2 vols. 4to., with a geological map of the state and other illustrations, among which are 14 sections crossing the state and the range of the formations from E. to W. Six of these sections exhibit the anticlinal structure, and in four others the strata all dip toward the E. None appear to indicate a synclinal structure. Along the W. base of the Green mountains extends a great belt of quartz rock, which in the opinion of the surveyors rests upon the gneiss, and which has been supposed to be the equivalent of the Potsdam sandstone, though now regarded by the Vermont surveyors as of the age of the Medina sandstone of the Clinton group of New York. Apparently overlying this is a great bed of crystalline limestone 2,000 feet thick called the Eolian limestone, from Mt. Eolus in the S. W. part of the state. This has been generally referred to the lower silurian group, but its true position in the geological series is very doubtful. The rock constitutes the principal portion of several ranges of mountains in the S. part of the state. Along Lake Champlain the rocks are lower silurian and primordial, slates found in the town of Georgia being lately referred to the latter system by the Austrian geologist M. Barrande, on the evidence of trilobites discovered in them. The laurentian group is represented in a small exposure near Whitehall at the S. extremity of Lake Champlain.—Various mineral productions of value are found in connection with the ancient formations of this state. The talcose slates and quartz rocks, as throughout the whole range of the Appalachian chain, present numerous deposits of hematite iron ore, which have heretofore given support to 10 blast furnaces. (See IRON MANUFACTURE.) The same formation has also furnished productive mines of manganese at Chittenden; and at Plymouth it has been productive of gold to such an extent as to lead within a few years past to considerable exploration. Lead ores, more or less argentiferous, have been found at several localities along this range, but have not proved profitable to work. At Vershire and Corinth, Orange co., is a large vein of pyritous copper ore of considerable promise. (See COPPER.) In the serpentine rocks about Troy, in the extreme northern part of the state, chromic iron has been met with in considerable quantity. The rocks themselves are in many places found to be well adapted to a variety of useful purposes. The argillaceous slates of Rutland and Windham counties have already been noticed in the article SLATE, vol. xiv. p. 694; the variegated marbles found near Burlington, the statuary marble of Rutland, and the serpentine of Roxbury, are noticed in the article MARBLE. Excellent clay for white stone ware has been worked for the pottery at Bennington, and beds of soapstone are found in many towns along the central N. and S. line of the state.—The climate of Vermont is severe, and the winters are cold; but there are not many sudden changes, and the state is remarkably healthful.

The annual range of the thermometer is from —17° to +92°. In 1851, at Montpelier, which from its position well represents the general climate of the state, there were 115 clear, 221 cloudy, 18 rainy, and 11 snowy days; 7.75 feet of snow fell. The average temperature of each month at noon was as follows: January, 21°; February, 24.2°; March, 32.4°; April, 41.3°; May, 51.2°; June, 57.5°; July, 63.4°; August, 60.9°; September, 57°; October, 48.4°; November, 30.3°; December, 17.9°. The mean temperature of the year was 42.1°. The highest average of heat was 73°, and the highest actual temperature, June 30 and Sept. 10, at noon, 84°. The lowest average temperature of the winter was 22.6°, and the coldest noon was Jan. 30, when the mercury stood at 8°. In the year ending Jan. 1859, the whole number of deaths in the state was 3,919, or 1 in 80 of the population.—The soil of the state is generally a rich loam, most fertile where the underlying rock is limestone, but everywhere sufficiently so to reward the labors of the husbandman. In Jan. 1860, 4,995,624 acres of land were taxed, and the average price at which the land was put in the grand list was over $14 per acre. The forest trees are hemlock, fir, and spruce on the mountains, oak, beech, sugar maple, pine, hickory, elm, butternut, basswood, and birch on the lower lands, and cedar in the swamps. The mountains are generally covered with timber or afford good pasturage, and the proportion of unimprovable land is smaller than in some less mountainous states. In proportion to her population, Vermont produces more wool, live stock, maple sugar, butter, cheese, hay, hops, and potatoes than any other state in the Union. In 1850 there were 29,763 farms containing 2,601,409 acres, an average of about 88 acres to each farm. According to the census of 1860 there were 2,758,443 acres of improved and 1,402,396 of unimproved land in farms, valued at $131,117,082. The productions of that year were 431,127 bushels of wheat, 130,976 of rye, 1,463,020 of Indian corn, 3,511,605 of oats, 68,912 of peas and beans, 5,147,908 of potatoes, 75,282 of barley, 215,821 of buckwheat, 13,864 of grass seed, 2,975,544 lbs. of wool, 15,681,834 of butter, 8,077,689 of cheese, 631,641 of hops, 9,819,939 of maple sugar, 212,905 of beeswax and honey, and 919,066 tons of hay. The value of orchard products was $198,427 and of the products of market gardens $24,792. As a large proportion of the land is better adapted to grazing than to tillage, much attention has been given to the raising of live stock, and the horses, cattle, sheep, and swine of Vermont are of excellent quality. In 1860 there were 67,240 horses, 35 asses and mules, 171,698 milch cows, 42,860 working oxen, 149,359 other cattle, 721,993 sheep, and 49,433 swine, all valued at $15,884,393. The value of animals slaughtered in that year was $2,549,001. The wild animals of Vermont are the panther, wild cat, lynx, raccoon, wolf, fox, moose (found only in the extreme north of the state, and scarce even there), elk, deer, black bear, and rabbits and squirrels of several species. The birds are those of New England generally, but the northern aquatic birds appear in large numbers and early in the season on Lake Champlain. The lake yields large quantities and numerous varieties of fish. The muscalonge is the largest, and the lake white fish, salmon trout, pickerel, roach, perch, and other smaller fish are abundant. The proteus, an uncommon reptile in northern waters, is found there in considerable numbers. The rattlesnake, the black snake, two or three species of adder, and the harmless species of serpents are not infrequent.—The state abounds in beautiful waterfalls and other natural curiosities. The most remarkable are Bellows falls in the Connecticut river, in the town of Rockingham, which have a wide celebrity; the "Great falls" on the Lamoille in Milton; the McConnel's falls, and the natural bridge a little below them, in Johnson; the "Great falls" on the Clyde in Charleston, where there is a descent of 100 feet in 40 rods; the numerous falls on the Winooski, some grand and others picturesque, with its natural bridge and caverns in Duxbury; the magnificent fall of 70 feet in the Missisquoi at Troy, and the gentler one at Highgate; the falls in the Passumpsic at Lyndon; the falls in the Black river at Springfield; and the caves at Dorset and Plymouth. There are 550 miles of railroad in operation in the state, constructed at a cost for roads and equipments of $22,586,705.78. They are the following: Atlantic and St. Lawrence, 30 m.; Connecticut and Passumpsic rivers, 91 m.; Rutland and Burlington, 119 m.; Rutland and Washington, 29 m.; Vermont and Massachusetts, 10 m.; Vermont central, 119 m.; Vermont and Canada, 55 m.; Vermont Valley, 24 m.; Western Vermont, 59 m.; Bennington branch, 6 m.; Whitehall and Rutland, 8 m. Two of these roads, the Vermont central and the Rutland and Burlington, cross the Green mountain range, the former following the valley of the Winooski, and the latter at a point between Ludlow and Rutland along the upper route of Otter Creek.—Vermont is perhaps more exclusively agricultural than any other of the northern states. In the enumeration of the occupations of her people in 1850, 73,150 are reported as engaged in agriculture, 13,174 in manufactures, 1,303 in commerce, 187 in navigation, 77 in mining, and 1,563 in the learned professions. There has since been considerable increase in the manufacturing class, owing to the development of the slate and marble quarries, the porcelain manufacture, and the manufacture of scales and of iron; but the factories are nearly all small establishments. In 1860 there were 1,501 establishments manufacturing to the value of more than $500 each, employing an aggregate capital of $9,500,000 and 8,940 male and 1,860 female hands, consuming raw material worth $8,110,000, and yielding products valued at $16,000,000. Of these, 10 were cotton factories, employing

$321,000 capital and 142 male and 225 female operatives, using raw material worth $133,000, and producing goods valued at $357,400; and 50 woollen factories, employing $1,781,550 capital and 830 male and 1,065 female hands, using raw material worth $1,679,594, and producing goods valued at $2,550,000. The production of sawed and planed lumber was valued at $1,060,000; flour, $1,660,000; steam engines and machinery, $493,836; agricultural implements, $157,647; tanned leather, $1,000,053; bar iron, $63,000; pig iron, $92,910.—The commerce of Vermont, except that which passes over its railroads, of which thus far there is no published record, is entirely conducted on Lake Champlain, and mainly through the port of Burlington. In 1860 the enrolled and licensed tonnage of the state was 7,744. The entries and clearances of the year (all from or to Canada) were as follows:

	Vessels.	Tons.	Men.	American vessels.	Tons.	Foreign vessels.	Tons.
Entered	457	29,232	1,374	227	12,059	230	17,173
Cleared.	347	23,460	1,147	183	9,929	164	13,631
Total.	804	52,692	2,521	410	21,988	394	30,804

The exports of the state in 1860 were $783,702, of which $257,083 was American produce, and $526,619 foreign produce. The imports were $2,731,857, a large proportion of which was British goods admitted through Canada. The growth of this importing trade, the result of the reciprocity treaty with Canada, will appear upon a comparison with the returns of 1854, when the exports were $1,445,244, and the imports $337,279. The number of banks in the state, July 1, 1860, was 42, whose condition was as follows: Capital paid in, $4,004,000; circulation, $3,390,874; due depositors, $834,516; total liabilities, $8,205,013. Notes and bills discounted, $6,340,047; deposited in city banks, $891,005; specie, $170,572; total resources, $8,488,350. The net decrease of bank capital during the year was $25,000; of circulation, $157,800. The average dividend of the year was about 7 per cent. on the capital. On Sept. 14, 1860, there were in the state 14 savings banks, of which 2 were in the hands of receivers in chancery, 2 were winding up their affairs, and 10 were doing business; the deposits in the 12 banks were $1,145,263; increase during the year, $174,103.—The number of churches of all religious denominations in 1850 was 599, of which 102 were Baptist, 9 Christian, 175 Congregational, 26 Episcopal, 1 Free, 7 Friends', 140 Methodist, 11 Presbyterian, 8 Roman Catholic, 76 Union, 2 Unitarian, 38 Universalist, and 4 Second Advent. There was 1 church to every 524 inhabitants. The value of church property was $1,216,125. Vermont has 3 collegiate institutions, viz.: the university of Vermont, at Burlington, founded in 1791; Middlebury college, at Middlebury, founded in 1800; and Norwich university, a classical institution with a military organization, founded in 1834. In 1860 these colleges had 17 professors, 287 students, and about 28,000 volumes in their libraries. There are 3 medical schools, at Castleton, Woodstock, and Burlington; a theological seminary (Baptist) at Fairfax, and a theological institute (Episcopal) at Burlington; 118 academies and high schools, 149 select schools, and 2,937 school districts. The number of children between the ages of 4 and 18 years is 85,892. The provisions for popular education have been at a very low ebb. In 1845 the school fund, amounting to a little more than $200,000, was abolished, and the money used to pay the state debt. From 1851 to 1856 there was no superintendent of schools. In 1856 a board of education was established, consisting of the governor and lieutenant-governor *ex officiis*, and 3 members appointed by the governor and senate. This board appoints a secretary for a year, to whom the town superintendents are to report on or before Sept. 1 in each year. Under the active efforts of the secretary and the board of education, an improvement has taken place in the condition of the public schools. The state makes provision for the education of its indigent deaf and dumb children at the American asylum, Hartford, Conn. The Vermont asylum for the insane at Brattleborough is partially a state institution, and the indigent insane of the state are provided for there. A commissioner is annually appointed by the state to visit the institution and secure the admission of worthy applicants. In the year ending Aug. 1, 1860, the whole number of patients was 574 (290 males and 284 females), of whom 169 were state beneficiaries. The whole number remaining in the asylum at that date was 436, of whom 128 were state patients. Its income during the year was $59,270.28; expenditures, $57,809.68. The state prison is at Windsor, and the superintendent is a state officer annually appointed. The whole number of convicts for the year was 122, of whom 24 were discharged, 13 by expiration of sentence, 9 by pardon, and 2 died, leaving 98 in the prison Sept. 1, 1860, 92 males and 6 females. The labor of the prisoners is let to contractors. The income for the year was $7,990.22; expenditures, $9,195.39. In 1862 there were in the state 36 weekly and 6 daily newspapers.—The government of Vermont approaches much more nearly than that of some of the other states to a pure democracy. Its original state constitution was adopted in 1777, and was modelled on that of Pennsylvania. It was revised by the council of 13 censors, for whose election by the people once in 7 years it provided, in 1786, and again in 1793, when, with the exception of a few particulars, it assumed its present form. No alterations were made till 1828, when the elective franchise was somewhat restricted. In 1836, for the first time, a senate was established, there having previously been only a house of representatives and a governor's council of 12, which latter was then abolished. In 1850 assistant judges of the county courts, sheriffs, high bailiffs, state's attorneys, judges of probate, and justices of the peace, previously chosen by the legislature, were made elective by the people. The executive officers are a governor (salary $1,000) and lieutenant-governor, who is also president of the senate, and a treasurer (salary $500), who are elected by the people; a secretary of state (salary $400), an auditor of accounts (salary $500), reporter of decisions of the supreme court (salary $450), and various other officers elected by the legislature or board of education. The secretary of civil and military affairs (salary $225) is appointed by the governor. The senate consists of 30 members, and the house of representatives of 239, one from each town, who are elected annually and receive $2 a day. The judiciary consists of a supreme court with a chief judge and 5 assistants, each of whom has a salary of $1,500; they are elected annually by the legislature, and separately hold 2 county courts in each county, assisted by 2 assistant county judges, who are elected by the people of their respective counties, and also a term of the supreme court in each county, and 2 general terms annually, one east of the mountains, the other west. There are also 2 sessions of the court of chancery annually, and each judge of the supreme court is a chancellor. The annual election takes place on the first Tuesday in September, and the legislature assembles on the second Thursday in October. Every male citizen of the United States, 21 years of age and of quiet and peaceable behavior, and who shall have resided in the state one year, is entitled to vote for all elective officers. The council of censors consists of 13 persons chosen every 7 years, and holding office one year. Their duty is to inquire whether the constitution has been preserved inviolate in every part during the last septenary (including the years of their service), and whether the legislative and executive branches of government have performed their duty as guardians of the people, or assumed to themselves or exercised other or greater powers than they are entitled to by the constitution. They are also to inquire whether the public taxes have been justly laid and collected in all parts of the commonwealth; in what manner the public moneys have been disposed of, and whether the laws have been duly executed. For these purposes they have power to send for persons, papers, and records; they have authority to pass public censures, to order impeachments, and to recommend to the legislature the repealing such laws as shall appear to them to have been passed contrary to the principles of the constitution. These powers they have for one year from the day of their election. The first council of censors met in 1785, and the 12th is to meet in June, 1862. The state, up to Jan. 1861, had no permanent debt; loans of a temporary character, to be reimbursed by tax, had been contracted for the completion of a new state house, the old one having been destroyed by fire in 1857. The entire state expenditure for the year ending Aug. 31, 1860, was $230,489.42, and the receipts from all sources were $241,089.16. The loans for the state house amounted to $175,000. The taxables for the year were 56,523 polls rated at $2, equal to $113,046; real estate valued at $70,341,721.18; personal estate over debts owed, $16,530,130.47; total, $86,871,851.65. The amount of taxes for the year 1859–'60 was $146,903.79.—Vermont was discovered and a portion of its territory traversed in 1609 by Champlain, Dupont, and Chauvin, 3 French officers, accompanied by a party of Algonquins. For a century later it was the battle ground of the Algonquin tribes and their allies among the New England Indians, and the Iroquois of New York. The first white settlement in the state was made in 1724, by the erection of Fort Dummer in the S. E. corner of the present town of Brattleborough, which was then supposed to be within the limits of Massachusetts. From this fort and from Charlestown, N. H., troops were sent against the French in the French war of 1745, and the fertile lands along the upper Connecticut, the Winooski, and Otter Creek attracted their attention. The tide of emigration began to set in about 1760, and between that date and 1768 138 townships had been granted within the present limits of the state by Gov. Wentworth of New Hampshire, who claimed the jurisdiction and fee of the soil by virtue of the New Hampshire charter. The country west of the Connecticut was only known at that time by the name of "New Hampshire grants." Gov. Wentworth was acquiring a princely fortune by these township grants (for, in addition to his fees and other emoluments, he reserved to himself 500 acres of land in each township which he granted), when a proclamation was made by the governor of New York, Dec. 28, 1763, claiming the territory under the grants from Charles II. to the duke of York, and ordering the sheriff to make returns of the names of those who had settled W. of Connecticut river under titles derived from New Hampshire. Gov. Wentworth issued a counter proclamation, March 13, 1764, declaring those claims obsolete, and maintaining the jurisdiction of New Hampshire. New York appealed to the crown, and it is said forwarded a spurious petition, alleged to be from the settlers on these grants, praying to be annexed to New York. To this New Hampshire made no remonstrance, and the king on the strength of it granted to New York jurisdiction to the Connecticut river; and the governor of New Hampshire assented to it. Having thus succeeded, the New York government attempted to eject and dispossess the settlers from their lands, and through venal judges decided every case against them. This roused the spirit of the settlers to such a degree that they commenced, under the leadership of Ethan Allen, Seth Warner, and other bold and fearless men, an armed resistance to the oppression of the New York government; every officer who undertook to enforce a process of ejection was stripped, tied to a tree, and whipped with beechen rods without mercy. This application of the "beech seal," as it was called, was so effectual, that no officers could be procured to serve writs. The strife continued for 10 years, and after trying various expedients, Gov. Tryon issued a proclamation commanding Ethan Allen, Seth Warner, Remember Baker, Robert Cochran, Peleg Sunderland, Silvanus Brown, James Breakenridge, and John Smith to surrender themselves within 30 days under pain of conviction of felony and death without benefit of clergy, and offering a bounty of £150 for the capture of Allen and £50 for each of the others. The Vermont leaders retorted by offering a reward for the apprehension of the attorney-general of New York. The commencement of the revolution caused a suspension of the controversy. In 1776 the Vermont settlers petitioned the provincial congress, then in session in Philadelphia, for admission into the confederacy; but New York opposed, and they withdrew. In 1777 Vermont declared her independence, and in July of the same year again applied to be admitted into the confederacy. Congress hesitated and temporized, and the people became indignant. Meantime the British generals endeavored to seduce the Vermonters to allegiance to Great Britain. Aware of the importance of gaining time, and avoiding the troubles which would follow a bold decision in favor of the congress which had twice repulsed them, Allen and his coadjutors amused the British officers and kept them inactive till the theatre of the war was changed. In 1781 congress offered to admit Vermont with a considerable curtailment of her boundaries; but the people refused to come in on such terms, and for 8 years she remained outside the Union. In 1790 New York revived the old question, but with evident desire for its settlement; and having offered to relinquish all claims to lands in or jurisdiction over the state on the payment of $30,000, Vermont acceded to the proposition, and on March 4, 1791, was admitted into the Union. But though not one of the confederated colonies, and having no voice in their councils, the "Green mountain boys" had distinguished themselves during the revolution in some of the hardest fought and most successful battles and expeditions of the war. Allen and his little company of 83 men took Fort Ticonderoga, May 1, 1775. Allen and Warner participated in the invasion of Canada, and the former was taken prisoner and sent to England, while the latter with his regiment protected the retreat from Quebec, and adopted the measures which led to the capitulation of the British garrison at St. John's. In the battles on Lake Champlain, though disastrous, their obstinate resistance gained them credit; and the two battles near Bennington, which were the primary causes of Burgoyne's defeat and surrender, immortalized the desperate bravery of the Green mountain boys. After the admission of the state into the federal Union, Vermont prospered beyond most of the other states. In the war of 1812 her sons took an active part in the battle of Plattsburg and the naval conflict on Lake Champlain, and added to their old renown for valor. In 1837, at the time of the Canadian rebellion, a considerable body of the inhabitants of northern Vermont sympathized with the insurgents, and to the number of 500 or 600 crossed the line into Canada. A well armed and well disciplined British military force was despatched to drive them off, and Gen. Wool, then in command on the frontier, gave them the alternative of returning and surrendering their arms to him, or, if they persisted and were compelled to retreat into Vermont, of being shot when they came over. At first they were obstinate, but the approach of the British soldiers made them reconsider their determination, and they laid down their arms and dispersed.

VERMONT, UNIVERSITY OF. See BURLINGTON.

VERNET. I. CLAUDE JOSEPH, a French painter, born in Avignon, Aug. 17, 1714, died in Paris in 1789. He received his first instructions in painting from his father, Antoine Vernet, and in 1732 went to Italy to study the great masters of history; but, charmed by the beauties of the Mediterranean coast, he soon devoted himself chiefly to marine views and landscapes, in which he acquired uncommon facility. His early residence in Italy was marked by great hardships, and he was sometimes obliged to procure money by painting coach panels, some of which were afterward taken out and framed as works of great value. After an absence of 20 years he returned to France with the reputation of the first marine painter of Europe, and in 1753 was commissioned by the French government to paint the principal seaports of France. For 10 or 12 years he was chiefly occupied with this undertaking, and the pictures, 15 in number, are now in the Louvre. During the remainder of his life he produced about 200 pictures, and was held to be unrivalled in landscape by any contemporary but Wilson. Most of his important works have been engraved. II. ANTOINE CHARLES HORACE, generally known as Carle Vernet, a French painter, son of the preceding, born in Bordeaux, Aug. 14, 1758, died Nov. 27, 1836. He was first instructed by his father, and subsequently became a student at the French academy, where in his 24th year he gained the grand prize, which entitled him to the privilege of going to Rome with a pension. He soon rose into eminence, and during the Napoleonic wars executed a celebrated series of battle pieces, including "The Battle of Marengo," "A Battle with the Mamelukes," "The Morning of the Battle of Austerlitz," "The Bombardment of

Madrid," "The Battle of Rivoli," "The Battle of Wagram," &c., which are widely known by engravings. His small pictures of *genre* and military subjects are very numerous and highly prized. He excelled in painting horses, and among the best of his small pictures are his equestrian portraits. III. **Émile Jean Horace**, commonly known as Horace Vernet, a French painter, son of the preceding, born in Paris, June 30, 1789. He was a pupil of his father, and also received instructions from the architect Chalgrin, who was his maternal uncle, and from J. M. Moreau the designer. He was obliged at an early age to use his pencil for his own support. He competed unsuccessfully for the grand prize of the academy of fine arts, and after two years' service in the army was married in 1809, and commenced his artistic career by the production of his "Capture of a Redoubt," in which he showed the originality of his genius by breaking away from the conventional classicism of David and his school, and taking nature for his guide. The military glory of France was the earliest source of his inspiration, and his own experience as a soldier enabled him to impart a character of truthfulness to his battle pieces which at once gave them a high position among contemporary works of their class. Within a few years appeared his "Dog of the Regiment," "Trumpeters," "Halt of French Soldiers," "Battle of Tolosa," "Massacre of Mamelukes," "Barrier of Clichy," "Battle of Jemmapes," "Battle of Valmy," "Soldier of Waterloo," "Last Cartridge," "Death of Poniatowski," &c., in which were clearly developed the qualities for which the painter is most remarkable, vivacity and propriety of action, and force of expression. Enjoying under the Bourbons no less prosperity than during the empire, he was in 1825 created an officer of the legion of honor, in 1826 elected a member of the institute, and in 1828 appointed director of the French academy at Rome, which position he held for 10 years. Among additional works produced previous to the accession of the Orleans line were "Mazeppa," presented by the artist to the Athenæum of Vaucluse, out of gratitude for attentions paid by that institution to the memory of his grandfather; "Review by Charles X.," "The Bridge of Arcole," and "Edith seeking the Body of Harold," a not very successful attempt in the romantic style of Delacroix. Louis Philippe became a warm patron of Vernet, and among other works commissioned him to paint for the Constantine hall of the palace at Versailles a series of large pictures illustrating the triumphs of the French arms in Algeria, in the execution of which he paid several visits to that country and the Holy Land for the purpose of studying costumes, physiognomy, and scenery. Conspicuous among these are several episodes in the siege of Constantine, "The Capture of the Smala," "The Battle of Isly," and "The Capture of Bougiah," which are not only among the largest pictures ever painted on canvas, but are perhaps unequalled as spirited and faithful representations of battle scenes. Other works of this class are his battles of Jena, Friedland, Wagram, and Fontenoy, "The Bombardment of San Juan de Ulloa," "The Attack on the Citadel of Antwerp," "The Fleet forcing the Entrance of the Tagus," &c. His numerous miscellaneous works belonging to this period include a remarkable series taken from sacred history, in which the characters are habited in the Arabian costume of the present day. Of this class of pictures characteristic specimens are "Judith and Holofernes," "Rebecca at the Well," "Hagar driven out by Abraham," and "The Good Samaritan." Another series of works suggested by his eastern travels, and which have obtained great popularity, are "The Lion Hunt," "Council of Arabs," "Arab Mother rescuing her Child from a Lion," and a multitude of others, executed with great facility and spirit. Among his remaining miscellaneous and historical works are the "Arrest of the Princes at the Palais Royal by order of Anne of Austria," "Combat between the Pope's Riflemen and Brigands," and "The School of Raphael." He declined a peerage from Louis Philippe, his friendly relations with whom were for a time suspended in consequence of the refusal of the painter to falsify history by representing Louis XIV. leading the assault at Valenciennes. During this interval Vernet visited St. Petersburg, where he received flattering attentions from the czar. He has recently been occupied with great battle pieces illustrating the capture of Rome by Gen. Oudinot in 1848, and the campaigns in the Crimea and in Italy. His portraits are numerous, and include those of Napoleon I., Louis Philippe and his sons, and Napoleon III. He received a grand medal of honor at the exposition of 1855, has been decorated with many of the orders of continental Europe, and stands at the present day at the head of his profession in France in respect to the number, variety, and size of his pictures, and to the influence which he has exerted upon contemporary painters. His daughter was married to Paul Delaroche.

VERNIER, a contrivance invented by Peter Vernier of Brussels in 1631 for subdividing the divisions of graduated arcs or scales into minute parts. The principle of the apparatus consists in the use of two scales, one movable and sliding along the side of the other, which is fixed. The movable scale has 10 divisions, which are made equal to either 9 or 11 divisions of the fixed scale. In the one case they are numbered from 0 to 10 forward, or in the same direction with the numbering of the fixed scale; in the other case the reading of the vernier scale is backward, or in the opposite direction to that of the fixed scale. The scale of inches divided into tenths, as in use upon English barometers, will exemplify the use of the vernier in obtaining readings of tenths of these subdivisions or of hundredths of inches.

In the case of the vernier scale of 10 parts, equal to $\frac{9}{10}$ of an inch, being set so that the 0 line of the vernier coincides with an inch line of the fixed scale, it is obvious that the moving of the vernier $\frac{1}{10}$ of one of the divisions of the fixed scale will bring the division of the vernier marked 1 into coincidence with a line of the fixed scale; and the same if the vernier is moved $\frac{2}{10}$, $\frac{3}{10}$, or any number of tenths of an inch, plus $\frac{1}{10}$ of one of the divisions of the fixed scale. So if the movement be $\frac{2}{100}$, $\frac{3}{100}$, or $\frac{4}{100}$, &c., of an inch beyond the coincidence of the 0 of the vernier with any divisional line of the fixed scale, the division 2, 3, or 4, &c., of the vernier will be found to coincide with some line of the fixed scale, thus indicating the number of hundredths of an inch to be read in addition to the inches and tenths of the fixed scale. In the other form of the vernier, in which its 10 parts correspond to 11 of the fixed scale, the necessity for numbering in the opposite direction to that of the scale is perceived on setting the 0 of the vernier to coincide with an inch line of the fixed scale, when the pushing forward of the vernier $\frac{1}{100}$ of an inch will bring the first line from the forward end of the vernier instead of the backward end to coincide with the line of the fixed scale, and so on. The latter form may be preferred on account of increased clearness arising from the greater size of the vernier divisions; while the former has the advantage in both scales being read in the same direction. Important astronomical and geodetical instruments, as theodolites, are provided with 2 or 3 verniers at equal divisions of the circle, all of which are read and noted with each observation in order to serve as corrections upon each other, the mean of the several readings being the true result.

VERNON, a W. county of Missouri, bordering on Kansas, and drained by the Osage river and its affluents; area, about 700 sq. m.; pop. in 1860, 4,779, of whom 136 were slaves. The surface is undulating and the soil fertile. It has been formed out of parts of Bates and Cass counties since 1850. Capital, Nevada City.

VERNON, Edward, an English admiral, born in Westminster, Nov. 12, 1684, died at his seat of Nacton in Suffolk, Oct. 29, 1757. He was descended from an ancient family of Staffordshire, and his father, James Vernon, had been secretary of state from 1697 to 1700. The son entered the navy, and first served in the expedition of Admiral Hopson, which, in Oct. 1702, destroyed the French and Spanish fleets off Vigo; and he was present the following year at the sea fight off Malaga between the French and English. He attained the rank of rear admiral in 1708, and remained in active service till 1727, when he was elected a member of parliament for Penryn, and in the succeeding parliament, which lasted from 1734 to 1741, he sat for Portsmouth. In the house he attracted attention, says Smollett, "by loudly condemning all the measures of the ministry, and bluntly speaking his sentiments, whatever they were, without respect of persons, and sometimes without any regard to decorum." Once, in a debate upon the depredations of the Spaniards, he declared that Porto Bello could be taken with 6 ships; and so much favor did the remark meet with from the people that Vernon was extolled all over the kingdom. To silence the general clamor, the ministry, glad perhaps to be relieved from a troublesome member of parliament, and possibly desirous that the new commander might disgrace himself and his party, sent him to the West Indies with the rank of vice-admiral of the blue. In Nov. 1739, he appeared off Porto Bello with 6 men-of-war, and the city was taken the day after the attack began, the English losing only 7 men. Although this expedition had no important result, Vernon became the idol of England, and his birthday was celebrated with lights and bonfires. He next took and destroyed Fort Chagres on the isthmus of Darien; and in Jan. 1741, he sailed from Jamaica with 29 ships of the line and 80 smaller vessels, having on board 15,000 sailors and 12,000 land forces, 4 battalions of which were from the American colonies north of Carolina. After cruising in search of the French and Spanish fleets, Vernon resolved to attack Carthagena, the strongest place in South America, and on March 4 appeared before the town. The assailants were repulsed, and sickness destroyed those whom the sword spared. Vernon attributed the disastrous failure of this expedition to his not having the sole command, and the result did not seem to diminish his popularity in England. In 1742 he planned an expedition against Panama. He had been elected to the parliament of 1741 from Penryn, from Rochester, and from Ipswich. He accepted the representation of the last named place, and was returned from it to the parliaments of 1747 and 1754. During the invasion of the pretender in 1745, he was employed to guard the coast of Kent and Sussex. In this he gave satisfaction, but, in consequence of a quarrel with the admiralty in regard to the appointment of a gunner, his name was struck from the list of admirals. It is said that in the controversy on this subject he wrote several pamphlets in defence of himself. During the last years of his life he lived in great measure in retirement. He was a brave man, but his impetuous temper rendered it hardly possible for him to endure even an associate.

VERNON, Robert, an English collector of paintings, born in 1774, died May 22, 1849. He commenced life in humble circumstances, but by industry and sagacity in commercial pursuits amassed a handsome fortune, a great portion of which was devoted to the purchase of pictures, principally by British artists. His collection gradually growing beyond the capacity of his house to contain it, he presented the most valuable portion to the government, which thus, in Dec. 1847, became possessed of 157 works of merit, all but two by British, and a large proportion by living artists. The British national gallery, founded in 1824, contained at the time of Mr. Vernon's donation but 41 pictures by native artists, and the Vernon collection, as it is still called, may be considered the nucleus of a national gallery of British art on a considerable scale. The Vernon collection was for some time exhibited with a portion of the pictures presented by J. M. W. Turner to the nation at Marlborough house, but has now been removed to South Kensington. It comprises a marble group by Gibson of Hylas and the nymphs, and a number of busts.

VÉRON, LOUIS DÉSIRÉ, a French writer and journalist, born in Paris, April 5, 1798. He finished his education at the imperial lyceum in 1816, studied medicine, became an assistant physician to the hospital in 1821, was made doctor of medicine in 1823, and the year following began the publication, in a kind of pamphlet, of the results of his medical observations. At the same time he held the position of director of the opera. In 1824 he was made physician to the *musées royaux* by M. Sosthène de la Rochefoucauld, and about the same time became connected with various journals. For the benefit of the family of M. Regnauld, a deceased apothecary and chemist, he determined to make the *pâte Regnauld*, a sort of cough lozenges bearing the name of its inventor, an object of speculation. In this undertaking he embarked his little property of 40,000 francs, and by his connection with the press was enabled to give the remedy a celebrity which not only enriched the family of his friend, but laid the foundation of his own fortune. In 1828 he gave up the practice of medicine, and became an editor of the *Quotidienne*. Subsequently he was attached to the *Messager des chambres*, and in 1829 founded the *Revue de Paris*, which under his control had great success. In March, 1831, he became the director of the opera at Paris; and after a management of 5 years, in which some of the most famous productions of modern times were brought on the stage, he quitted the position with a brilliant reputation as a theatrical manager. Turning his attention to politics, he became a candidate of the opposition for the chamber of deputies, but was defeated; and returning to journalism, he assumed the editorship of the *Constitutionnel*, of which in 1844 he became sole proprietor. This journal, to which he soon imparted a new life and prosperity, warmly supported the policy of Thiers; but in 1849, on the subject of the presidential message of Louis Napoleon, it openly broke with the ex-minister, and became a partisan of the present emperor. The *coup d'état* of Dec. 2, 1851, found in him a strong supporter, and he was elected as a government candidate from the arrondissement of Sceaux to the *corps législatif*, and reëlected in 1857. He retained the management of the *Constitutionnel;* but that journal having received two warnings in consequence of dissenting from the emperor's policy, he accepted an offer made for its purchase. This course he was induced to take also by the fact that several actions had been begun in the courts against the journal, though in all of them he was successful. In 1852 he was made an officer of the legion of honor. Beside his contributions to the press, Véron has written *Mémoires d'un bourgeois de Paris* (6 vols. 8vo., Paris, 1854); a romance entitled *Cinq cent mille francs de rente* (2 vols. 8vo., 1855); a political treatise under the title of *Quatre ans de règne: où allons nous?* (1857); and *Les théâtres de Paris de* 1806 *à* 1860 (8vo., 1860).

VERONA, a province of Austrian Italy, in the W. part of the government of Venice, bounded N. by the Tyrol, E. by Vicenza and Padua, S. by Polesina, and S. W. and W. by Mantua and Brescia, from the latter of which it is separated by Lake Garda; area, 1,330 sq. m.; pop. in 1857, 302,902. The Adige flows through the centre of the province, and the Mincio for some distance on the western boundary. In the N. part the surface is mountainous, but in other directions it is level or undulating. There are some marshes in the south. The soil is generally remarkably fertile, and the pastures are particularly rich. The chief productions are grain, fruit, flax, silk, oil, and wine. Lake Garda and the rivers are well stocked with fish, and game is plentiful in the forests. Copper and various kinds of marble are the principal minerals. The chief towns, beside the capital, are the fortress Legnago, Villafranca, and Caprino.—VERONA, the capital, is situated on both sides of the Adige, 63 m. W. from Venice; pop. in 1857, 59,169. It forms with Mantua, Peschiera, and Legnago the famous Italian quadrilateral. The river is crossed by 4 stone bridges, and the town is surrounded by extensive fortifications and entered by 5 gates. It stands in a beautiful country at the foot of the hills which form the last offsets of the Tyrolese Alps where they join the plains of Lombardy. Many of the streets are narrow and dirty, but some, more particularly the Corso, and that which leads from the Mantua gate, are wide and well kept. The cathedral is supposed to have been erected before the time of Charlemagne, and to have received extensive repairs in the first half of the 12th century. It is built in the Lombardo-Romanesque style, has a façade adorned with many fine sculptures, and contains several valuable paintings, a sepulchral monument of Julius Apollonius and his wife Attica Valeria, and the tomb of Pope Lucius III. The other churches are about 40 in number, and several of them are of very great antiquity. That of San Zenone, built between 1138 and 1178, on the site of an earlier one, is an interesting example of the architecture of the middle ages, and has undergone comparatively little change internally. There are several magnificent specimens of Roman architecture, the principal of which is the amphitheatre occupying one side of the Piazza Bra. It is of elliptical form, the transverse axis being 510 feet and the conjugate 410 feet, and is said to have been 120 feet high. It is supposed that it might have accommodated 22,000 persons at one time, and it is still in a good state of preservation, having been repaired in the 16th century. Among the many other remarkable edifices which the city contains may be mentioned the palaces of Canossa and Guasta Verza, both built by San Micheli; the palace *della gran guardia* in the Piazza Bra; that of Ridolfi; the palaces in the Piazza dei Signori, one of which has a square tower 300 feet high; the palace *del consiglio*, built after a design of Sansovino, but with additions by Fra Giocondo, the commentator of Vitruvius; and the *palazzo publico* opposite the amphitheatre. The library of the chapter of Verona contains upward of 12,000 volumes and about 540 MSS., some of which are of great antiquity. It was in this library that Petrarch discovered Cicero's epistles *Ad Familiares.* Verona has a lyceum, a gymnasium, a school of painting, a female college, a clerical seminary, an academy of agriculture and commerce, a theatre, and numerous charitable institutions. The houses have mostly a good appearance, marble being largely used in their construction, but the style of architecture is antiquated. The manufactures consist principally of silk, woollen, and linen goods, leather, soap, and earthenware; and a considerable trade is carried on in these articles, together with grain, oil, and sumach. Verona is the seat of one of the 5 sections of the imperial and royal institute of Austrian Italy; the residence of a governor; the head-quarters of the Austrian army in Italy; and the see of a bishop.—The date of the foundation of the town is unknown, but Julius Cæsar established a colony here, and under the Romans it became a flourishing city. On the decline of that empire it experienced the fate of other towns in the N. of Italy, and was taken by the Goths. Theodoric made it the capital of his empire. Charlemagne captured it 774, and it subsequently became a free town. In 1405 it was annexed to the possessions of Venice, and enjoyed peace till the invasion of Italy by the French in 1796, when it was captured and ceded to Austria the following year, but added to the kingdom of Italy in 1805. The ramparts and bastions, which had been constructed in the early part of the 16th century by the architect and engineer San Micheli, were almost entirely destroyed in fulfilment of the terms of the peace of Lunéville in 1801; but the gates were spared, and one of them, the Porta del Palio, has been termed a "miracle of architecture." In 1814 it became again subject to the Austrians, who have constructed walls and ramparts and made Verona one of the strongest places in Europe.

VERONESE, Paul. See Cagliari.

VERPLANCK, Gulian Crommelin, an American author, born in the city of New York in Aug. 1786. He was graduated at Columbia college in 1801, studied law, and after having been admitted to the bar passed several years in travelling in Europe. Returning to America, he interested himself in politics, and in 1814 was a candidate of the "Malcontents" for the New York assembly. In 1818 he delivered a discourse before the New York historical society on "The Early European Friends of America," which excited great attention at the time, and passed through several editions. In the following year, while the contest between the "Bucktails" and "Clintonians" was raging in the state, he published anonymously a volume containing political satires entitled "The State Triumvirate, a Political Tale," another entitled "Bucktail Bards," and "The Epistles of Brevet Major Pindar Puff," chiefly aimed at De Witt Clinton and his literary pretensions. In 1820 Mr. Verplanck was a prominent member of the New York legislature, where he acted as chairman of the committee on education. Not long afterward he accepted the professorship of the evidences of Christianity in the general Protestant Episcopal seminary in New York city, and in 1824 published a volume of "Essays on the Nature and Uses of the Various Evidences of Revealed Religion." In 1825 he published "An Essay on the Doctrine of Contracts: being an Inquiry how Contracts are affected in Law and Morals by Concealment, Error, or Inadequate Price" (8vo.). In the same year he was elected member of congress from the city of New York, and he held that office for 8 years. He was a warm advocate of the extension of the term of copyright from 28 to 42 years, a measure which was passed in the session of 1830-'31. At the close of the session Mr. Verplanck accepted a public dinner from a number of citizens, at which he delivered a speech on "The Law of Literary Property." In conjunction with W. C. Bryant and R. C. Sands, he published "The Talisman," an annual in prose and verse (3 vols. 8vo., 1827-'30; new edition under the title of "Miscellanies," 1833). Nearly one half of this work was written by Mr. Verplanck. After the death of Sands, Mr. Verplanck wrote the memoir of his friend prefixed to the collection of his writings. In 1833 appeared a volume of his "Discourses and Addresses on Subjects of American History, Arts, and Literature." In August he delivered at the commencement of Geneva college an oration on "The right Moral Influence and Use of Liberal Studies;" in 1834 an oration at Union college on "The influence of Moral Causes upon Opinion, Science, and Literature;" and in 1836 a discourse at Union college on "The American Scholar." In 1844 the first number of an edition of Shakespeare appeared under his supervision, and in 1847 the work was finished in 3 vols. 8vo. Since the close of his congressional career Mr. Verplanck has several times been a member of the senate of the state of New York. The senate of New York at that time composed, with the judges of the higher courts, the "court for the correction of errors," or the court of appeal in the last resort from the supreme court and chancery. Mr. Verplanck took an active part in these judicial duties, and many of his opinions on important questions are preserved in the last 7 volumes of Wendell's New York reports. He has been president of the board of commissioners of emigration of the state of New York since its organization in 1846. Mr. Verplanck prepared nearly all the annual reports of this commission for 15 years, all of which were republished in 1861 in one 8vo. volume in a somewhat condensed form, for the preservation of much curious statistics and matters of interest touching sanitary and charitable administration. He is also one of the governors of the New York hospital.

VERRES, a Roman governor of Sicily, put to death in 43 B. C. He was the son of a Roman senator, and became in 82 B. C. quæstor to Cn. Papirius Carbo, but subsequently deserted the Marian faction to which Carbo belonged, and joined that of Sylla, who gave him a share of the confiscated estates and sent him to Beneventum. He was pro-quæstor to Dolabella, prætor of Cilicia, 80-79 B. C., and participated in the iniquitous acts of that rapacious governor, but afterward turned against him, and contributed by his evidence to his conviction. With the money obtained by plundering the provinces, he was elected prætor in 74, and became by lot *prætor urbanus*. After managing the affairs of the city in defiance of all justice and law, he obtained at the expiration of his term of office the administration of Sicily, then the wealthiest and most highly favored province of the republic. In this island he remained 3 years, during which time he amassed enormous wealth, and fairly rendered Sicily desolate by his rapacity. The Sicilians intrusted to Cicero the prosecution of Verres, the importance of which was more due to political reasons than to the character of the criminal. Verres was defended by Hortensius, and supported by the Scipios and the Metelli. The decision was to be made by the senate, on whom the judicial power taken from the equites had been conferred by Sylla; and on the result of this trial depended in great measure the continuance of this power, inasmuch as there was a strong feeling among the people in favor of a reform of the court. The adherents of Verres spared nothing in the shape of promises, threats, and bribes, in order to secure his acquittal; but their efforts were useless, and before the 9 days which were given to the hearing of evidence were over, he fled to Massilia, where he remained in exile 27 years. He was put to death by the proscription of Antony.

VERROCCHIO, ANDREA, an Italian artist, born in Florence in 1432, died there in 1488. He was at once a sculptor, a goldsmith, and a painter, but was most distinguished in the first named capacity. Perugino and Leonardo da Vinci were among his pupils. He was the first to take moulds of the human form to aid him in designing. The pictures attributed to him are generally spurious.

VERSAILLES, a French city, capital of the department of Seine-et-Oise, situated 11 m. by railroad W. from Paris; pop. in 1856, 29,956. At the commencement of the 17th century it was a small village in the midst of woods, where the kings of France frequently came to hunt, and where about 1627 Louis XIII. erected a small chateau of red brick, chiefly for a hunting seat. In 1660 Louis XIV., becoming tired of St. Germain, conceived the idea of converting this building into a palace worthy of the court which he contemplated forming around him; and in 1664 the architect Levau commenced the alterations and additions, which during this and the next two reigns resulted in one of the most remarkable and imposing edifices of its class in Europe. The two principal elevations of the palace face E. and W., that on the E. comprising the old chateau of Louis XIII., with a wing and pavilion in the Corinthian style on the N. side, and a corresponding structure on the S. side completed by Louis XVIII., together with a chapel of remarkable richness and elegance in the best style of the age of Louis XIV., a theatre, several ranges of buildings formerly occupied by the royal ministers, and other dependencies; the whole enclosing several courts. The W. side of the palace, which was almost wholly the creation of Louis XIV., presents a large projecting mass of building, the central front of which is 320 feet long and each of its retiring sides 260 feet, with two immense wings, each exceeding 500 feet in length, the southern one being rather the longer. The general plan embraces a ground floor, first floor, and attic, of the Doric, Ionic, and Corinthian orders respectively; and a remarkable feature of this façade is the Ionic peristyles, 15 in number, supporting cornices crowned by as many statues as there are columns. The whole front is esteemed one of the most imposing in existence, although its immense extent and too great uniformity are also considered blemishes. West of this side of the palace extend the magnificent gardens laid out by Le Nôtre, and upon the construction of which vast bodies of laborers, including at one time 30,000 soldiers, were employed. Terraces, parterres, alleys, ornamental basins and fountains supplied by forcing pumps from the Seine, together with a profusion of statues, vases, and other sculptures, combine to render it one of the most attractive resorts in Europe, particularly on the first Sunday of the month, when the fountains play, although the general plan on which it is arranged differs essentially from those now in vogue. Beyond the gardens, which are included in it, lies the little park, about 8 miles in circumference, and W. of this is a third and larger enclosure, called the great park. Within this park and N. of the gardens are the royal mansions called the Grand Trianon and the Petit Trianon, with their respective gardens, of which the former was erected by Louis XIV., and the latter by Louis XV.

for Mme. Du Barry. This was also a favorite residence of Marie Antoinette, who erected a Swiss village within the famous English garden attached to it. In 1681 Louis XIV., accompanied by all his court, took up his residence at Versailles; and about that time were erected most of the dependencies connected with the palace, such as the *grand commun*, a vast square building which had 1,000 sleeping rooms and could lodge upward of 2,000 persons; the tennis court, famous for the oath taken in it by the national assembly, June 20, 1789, and which of late years has been used as a studio by Horace Vernet; the *garde meuble*, and other buildings, now occupied by various public functionaries of the city of Versailles. The expense of all these undertakings is estimated at 1,000,000,000 francs. At the same time every encouragement was given to persons desirous of building houses in the town, and during the 18th century a large and elegant city rose around the royal palace, which at one period numbered upward of 70,000 inhabitants. It is divided into two nearly equal parts by a noble avenue 300 feet broad, running E. and W., called the avenue of Paris, and which, with the avenues of St. Cloud and Sceaux, terminates in the Place d'Armes, or parade ground, a large open space 800 feet broad, into which project the outer gates of the E. or town front of the palace. The city is built with the greatest regularity, the streets crossing each other at right angles, and the houses being of a uniform height and an elegant style of architecture. The removal of the court to Paris in 1789 materially affected the prosperity of Versailles, which for upward of 100 years had been the royal residence, and which thenceforth declined almost as rapidly as it had risen. At the present day, the magnitude of the houses and the great extent of space occupied by them, compared with the population, give the place a monotonous and half-deserted appearance. Napoleon I. and his successors have, however, done much to restore and enlarge the palace, which, if not destined to become again the residence of French sovereigns and their courts, has been transformed into a vast and splendid museum containing immense series of paintings, sculptures, and works of art illustrative of "every thing that has reflected honor on the annals of France, from the cradle of the monarchy down to the present day."

VERTEBRATA, a name applied by De Lamarck to the highest branch of the animal kingdom, from its being characterized by a bony or cartilaginous internal skeleton, of which the most essential and persistent portion is the vertebral column or spine. (See Comparative Anatomy, Philosophical Anatomy, and Skeleton.) Aristotle had long before made the distinction of *εναιμα* (blood animals) and *αναιμα* (bloodless animals), corresponding respectively to the vertebrata and invertebrata of De Lamarck. Oken called the vertebrates *sarcozoa* or flesh animals; Ehrenberg, *myeloneura;* De Blainville, *osteozoaria;* and Owen, *myelencephala.* These various terms describe very accurately the relations of the skeleton, red blood, muscles, and cerebro-spinal nervous centres, characteristic of fishes, reptiles, birds, and mammals. The essential character of the spinal column is to have a distinct cavity above the axis for the nervous centres, and another below for the organs of vegetative life, both circumscribed by complicated bony arches. Vertebrates are the doubly symmetrical type of Von Baer, their embryological development producing identical parts arising on both sides of an axis, growing upward and downward and shutting up along two lines, the inner layer of the germ being enclosed below and the upper above; Van Beneden calls them *hypocotyledones* or hypovitellians, from the vitellus or yolk entering the body from the under or ventral side. De Lamarck also styles them intelligent animals, but comparative psychology is not sufficiently advanced to enable us to distinguish in this way between the sensations of a fish and a cephalopod or an insect. In vertebrates reproduction is sexual, without normal hermaphroditism, and the jaws move vertically and not laterally. Ehrenberg divides vertebrates into *nutrientia*, or warm-blooded, and taking care of their young, like mammals and birds; and *orphanozoa*, cold-blooded, taking no care of their young, like reptiles and fishes; some of the latter, however, do take care of their young, in a different or in the same way as the former division. The classes of vertebrates, according to Agassiz, are: 1, myzonts (myxinoids and cyclostomes); 2, fishes proper; 3, ganoids (sturgeons, &c.); 4, selachians (sharks and rays); 5, amphibians (frogs, salamanders, &c.); 6, reptiles; 7, birds; and 8, mammals. In this type, to use his words ("Atlantic Monthly," Jan. 1862, p. 12), "the head is the prominent feature; it is, as it were, the loaded end of the longitudinal axis, so charged with vitality as to form an intelligent brain, and rising in man to such predominance as to command and control the whole organism."

VERTIGO (Lat. *verto*, to turn), a common symptom of cerebral disturbance, with or without obscurity of vision, in which objects appear to turn round; beside the abnormal subjective sensations, there may be disordered movements prompted thereby. It may arise from too much or too little blood sent to the brain; from poisons in the circulation, as in alcoholic and other intoxication; and from lesions of the sensorial centres or the nerves therewith connected. The effect is that the intelligence is not able to correct the erroneous suggestions of the senses. It is most commonly a symptom of congestion of the brain, and often indicates an approaching attack of apoplexy epilepsy, or paralysis.

VERTOT, René Aubert de, a French historian, born at the chateau of Benetot, Normandy, Nov. 25, 1655, died in Paris, June 15,

1735. He studied in the Jesuits' college at Rouen, but before his academical course was concluded entered a Capuchin convent. Naturally delicate, the rigor of the order destroyed his health, and he was obliged to quit it for one less ascetic; and in his 22d year he entered the Premonstratensian abbey at Valsery, and soon afterward was presented with the priory of Joyenval. His preferment was opposed on the ground that a priest who had been transferred from one order into another was incapable by canon law of holding any dignity in the second. The case was decided by the pope in his favor, but he resigned and obtained successively cures near Marly and Rouen. In 1701 he became an associate, and in 1705 pensioner of the academy of inscriptions and belles-lettres. His works are mostly valued for their style and the dramatic power of portraiture they evince. They are: *Histoire des révolutions de Portugal* (Paris, 1689); *Histoire des révolutions de Suède* (2 vols. 12mo., 1696); *Histoire complète de l'établissement des Bretons dans les Gaules* (1710); *Histoire des révolutions arrivées dans le gouvernement de la république Romaine* (3 vols. 12mo., 1719); *Histoire des chevaliers hospitaliers de St. Jean de Jérusalem* (4 vols. 4to., 1726).

VERTUE, George, an English engraver and antiquary, born in London in 1684, died there in 1756. He began business on his own account as an engraver in 1709, painted in water colors, was patronized by the earl of Oxford and the earl of Winchelsea, became engraver to the society of antiquaries in 1717, engraved almanacs for the university of Oxford, illustrated Rapin's "History of England" (1743), and published various collections of British portraits and many historic prints. His antiquarian researches in matters connected with his profession were of much value.

VERTUMNUS, or Vortumnus, an Etruscan or Sabine divinity, worshipped by the ancient Romans as the god who presided over changes and transformations of all sorts, but especially the blossoming and bearing of trees and plants. He had the power of assuming any shape he pleased. Falling in love with Pomona, the goddess of the fruit of trees, he appeared to her in a variety of forms, and at last won her under the guise of a blooming youth. A *flamen* was appointed at Rome especially to superintend his worship; a festival called the Vortumnalia was celebrated in his honor on Aug. 23; and gardeners offered to him garlands of buds and the first produce of their lands.

VERULAM, Lord. See Bacon, Francis.

VERUS, Lucius Aurelius. See Antoninus, Marcus Aurelius.

VERVAIN. See Verbena.

VERVIERS, a town of Belgium, province of Liége, on the river Vesdre, near the Prussian frontier, 14 m. E. S. E. from Liége; pop. 20,000. It contains several churches, a theatre, several schools, hospitals, and charitable institutions, and a chamber of commerce. Woollen cloths are extensively made, the annual produce of the looms being estimated at upward of $5,000,000. Cotton, leather, soap, and hardware are also manufactured. Verviers is an ancient place, and had strong fortifications which were destroyed by Louis XIV.

VERY, Jones, an American poet, born in Salem, Mass., Aug. 28, 1813. He was graduated at Harvard college in 1836, and in the same year was appointed Greek tutor in that institution. Resigning his office in 1838, he made choice of the clerical profession, and was licensed as a preacher by the Cambridge association in 1843. In 1839 he published a small volume of "Essays and Poems;" the latter, among which "The Painted Columbine" is perhaps the best known, indicating an appreciative love of nature, and a deep religious feeling with a tendency toward mysticism. He has since contributed from time to time to the "Christian Register," "Monthly Religious Magazine," and "Salem Gazette." Though never ordained over a congregation, he still occasionally preaches.

VESALIUS, Andreas, a Flemish physician, founder of the modern system of anatomy, born in Brussels in 1514, died in the island of Zante, Oct. 15, 1564. He was educated at Louvain, Montpellier, and Paris, and was early distinguished by his knowledge of physics and his devotion to anatomical studies. In the last named city he became chief assistant of Gunther, and in 1526 discovered the origin of the spermatic blood vessels. The pursuit of practical anatomy was attended with so much difficulty and danger in France, that after returning to Louvain he joined the army of the emperor of Germany, and went to Italy, where in 1540 he was made professor of anatomy in the university of Pavia, in 1543 in that of Bologna, and not long afterward in that of Pisa. In 1543, when only 28 years old, he published his great work on anatomy, *De Corporis Humani Fabrica* (fol., Basel, enlarged ed., 1555). Sénac calls it the discovery of a new world, and Haller speaks of it as "an immortal work, by which all that had been written before was almost superseded." In it Vesalius exposed the errors of the Galenian school, who relied for their knowledge of the anatomy of the human body upon the observations made in the dissection of the bodies of the lower animals. The work met with the fiercest opposition, but the author's reputation constantly increased. About 1544 he was made chief physician to the emperor Charles V., and afterward to his son Philip II.; and the duties which devolved upon him at the court became gradually so harassing as to deprive him of all opportunity of increasing his knowledge of anatomy. In 1563 or 1564 he suddenly left Madrid to make a pilgrimage to Jerusalem, for reasons not certainly known. The common story is that he was once, with the consent of the kinsmen of the deceased, engaged in dissecting the body of a Spanish grandee who had died under his charge, when it was noticed that the heart still palpitated feebly. For this he was denounced to the inquisition as guilty of murder and impiety, and it was only through the personal interest of the king that he was enabled to save himself by promising to perform a pilgrimage to Jerusalem. Whether this account is true or not, he certainly sailed from Venice for Palestine; but no sooner had he reached Jerusalem than he received an invitation from the Venetian senate to accept the Paduan professorship of anatomy. On the voyage back he was wrecked on the island of Zante, where he is said to have died of starvation. Beside his great work, he wrote *De Radicis Chinæ Usu Epistola* (1546); *Anatomicarum Gabrielis Fallopii Observationum Examen* (Venice, 1564); *Examen Apologiæ Fr. Putæi pro Galeno* (Venice, 1564); and a paraphrase and translation of some of the works of the Arabic physician Rhazes. His writings are especially remarkable for the audacity with which he speaks of Galen, whose authority all his predecessors had slavishly recognized. His complete works, together with a life, were published at Leyden in 1725 (2 vols. fol.), edited by Boerhaave and Albinus.

VESPASIAN (Titus Flavius Sabinus Vespasianus), a Roman emperor, born near Reate in the Sabine country, Nov. 17, A. D. 9, died there, June 24, 79. He was of low origin, his father being a petty officer of the revenue, who died while the son was still young. Vespasian began his career by serving in Thrace as military tribune, became quæstor in Crete and Cyrene, and subsequently passed through the gradations of ædile and prætor. In the reign of Claudius, through the influence of Narcissus, the freedman of that monarch, he went to Germany as *legatus legionis*, and in 43 held the same command in Britain, where he served under Aulus Plautius and under the emperor himself, and reduced the Isle of Wight. He gained so much reputation in these campaigns that triumphal honors were granted him, and during the last two months of 51 he was made *consul suffectus.* Subsequently he governed Africa as proconsul, and while there was charged with obtaining money in a dishonorable manner. In 67 he accompanied Nero in his journey through Greece, but gave such offence to the emperor by once falling asleep while the monarch was displaying his vocal powers, that Nero forbade him his presence. At the end of 66 he was sent to the East to take command of the army in the Jewish war. In two years he reduced all Judæa except Jerusalem and some minor strongholds. His reputation in consequence of his military conduct rose so high, that an opportunity was offered him of ascending the throne. The civil war between Otho and Vitellius had but just broken out after the death of Galba, when, on July 1, 69, Tiberius Alexander, the prefect of Egypt, proclaimed Vespasian emperor at Alexandria. The choice was ratified on the 3d of the same month by the legions of Judæa, and not long afterward by the entire army of the East. His son Titus was left to put an end to the Jewish war, while one of his generals, Antonius Primus, marched at once into Italy, defeated the troops of Vitellius, and put Vitellius himself to death. In the mean time Vespasian had gone to Alexandria to cut off the supply of grain from Rome, but his recognition by the senate made any such step unnecessary. From Egypt he sent to Rome an edict repealing the laws of Nero and his successors in regard to the crime of *læsa majestas*, and also banishing astrologers. Not long afterward he arrived in Italy, where his coming was hailed with great joy by the people. His accession worked a great change in the condition of the empire. He maintained firm discipline among the soldiers, removed many unworthy senators and knights, restored order to the finances, and repaired the devastations which had been inflicted upon Rome during the recent civil commotions. He rebuilt many edifices, one of which was the capitol, erected a temple to Peace, and began the building of the Flavian amphitheatre, which was afterward called the Colosseum. The foreign wars of his reign were as successful as the internal condition of the empire was prosperous. The rebellion of the Batavi under Claudius Civilis was put down; Titus completed the conquest of Judæa; the governor of Syria took possession of Commagene; and a war was carried on in Britain with great success by Petilius Cerealis, Julius Frontinus, and Julius Agricola, the father-in-law of Tacitus. In 71 the temple of Janus was closed, and in 74 the last census of Roman citizens ever made was taken. In 79 a conspiracy formed by Alienus Cæcina and Marcellus was discovered, and of the two leaders, the former was summarily put to death, while Marcellus escaped the same fate by suicide. In the summer of the same year Vespasian on account of failing health retired to his early home in the Sabine country. When he felt the approach of death he caused himself to be placed upon his feet, saying it was the duty of an emperor to die standing. He was one of the best and wisest of the Roman emperors, although his personal character was disfigured by certain mean traits, the most conspicuous of which was an avarice which displayed itself in a taste for little savings. His simple style of living furnished a strong and elevating contrast to the luxury and debauchery in which his immediate predecessors had passed their lives. The chief authorities for his life are Suetonius, Dion Cassius, and Tacitus. The two succeeding emperors were his sons Titus and Domitian.

VESPERS (Lat. *vesper*, evening), in the Roman Catholic church, a portion of the divine office recited daily by priests, and generally sung publicly, as the afternoon service, on Sundays and other high festivals. It consists of 5 of the psalms of David, a hymn, the *Magnificat*, or canticle of the Virgin Mary, from the 1st chapter of St. Luke, and several prayers, anthems, &c.

VESPUCCI, AMERIGO, an Italian navigator from whom the name of America has been derived, born in Florence, March 9, 1451, died in Seville, Feb. 2, 1512. He came of a noble but not wealthy family, and received his education under his uncle the friar Giorgio Antonio Vespucci. Later in life he engaged in commerce at Seville, as an agent of the Medici family of Florence. He was in that city when Columbus returned from his first voyage; and in 1496, while engaged in fitting out 4 caravels for the Spanish service in the countries lately discovered, he occasionally met with Columbus, and was induced to prepare for a career of nautical adventure. In 1499 he sailed from Spain in an expedition fitted out under command of Alonso de Ojeda, which visited Paria and several hundred miles of coast, and returned in June, 1500. In the following month Vespucci wrote to Lorenzo de Pier Francesco de' Medici of Florence an account of the voyage, which lay hid in manuscript until 1745, when it was published by Bandini. In May, 1501, he entered the service of Emanuel, king of Portugal, and participated in an expedition which visited the coast of Brazil. Of this voyage he also wrote an account to the same member of the Medici family, which was first brought to light by Bartolozzi in 1789. In 1504 he sent to the same person a fuller narrative of this expedition, which was published at Strasbourg in 1505, under the title, *Americus Vesputius de Orbe Antarctico per Regem Portugalliæ pridem inventa*. From this voyage he acquired the reputation of being the discoverer of the mainland. In May, 1503, he commanded a caravel in a squadron that sailed for the discovery of Malacca, but parted company from the rest, and finally made his way to the coast of Brazil, where he discovered the bay of All Saints, remained there two months, then ran 260 leagues further S., where he landed, built a fort, took in a cargo of Brazil wood, and after a stay of 5 months stood for Lisbon, which he reached in June, 1504. His services apparently did not meet with their full reward, for early in 1505 he sought employment from the Spanish court, and from King Ferdinand received letters of naturalization. He and Vincente Yañez Pinzon were appointed captains of an armada to be sent out in the spice trade and to make discoveries, but the voyage was finally abandoned. On March 22, 1508, he was made principal pilot with a salary of 10,000 maravedis. He was placed over a *deposito hydrografico*, and was charged with the preparation for the *casa de contratacion* of a general description of coasts and accounts of expeditions, in which every year new discoveries were to be entered, beside the construction of charts and the examination of pilots and other duties. After his return from his Brazil expedition in 1504, he wrote from Lisbon a letter to René, duke of Lorraine, containing an account of 4 voyages which he says he had made to the new world, and states that the first expedition in which he was concerned sailed from Cadiz May 20, 1497, and returned in Oct. 1498. It is this remark which has been the source of a fierce controversy as to the first discovery of the mainland of America, and as to the true character of Vespucci, against whom it has been charged that after the return from his first voyage to Brazil he made a maritime chart, in which he gave his name to that part of the mainland. The statement in the letter is unquestionably false. The name Americi Terra was applied to this continent as early as 1507, by Waldsee-Müller (Martinus Hylacomylus), a geographer of Freiburg in the Breisgau, in a small work entitled *Cosmographiæ Introductio, insuper quatuor Americi Vespucci Navigationes*. It does not appear that Vespucci himself had any intention of taking the honor of the discovery from Columbus, with whom he was on friendly terms; and it was not until the appearance of the *Opusculum Geographicum* of Schoner in 1533, and of the attack of Servetus in the Lyons edition of Ptolemy's geography in 1535, that charges were brought against him.—See "Life and Voyages of Americus Vespucius," by C. E. Lester (New York, 1846), and "Vespucius and his Voyages," by Santarem, translated by E. V. Childe (Boston, 1850).

VESTA, the Roman name of the goddess of the earth, identical with the Greek Hestia. According to the Hesiodic theogony, she was the daughter of Cronos (Saturn) and Rhea. Her brother Jupiter allowed her to assume a vow of perpetual celibacy, and granted her the first oblations in all sacrifices. She was not represented by any statue in the temple devoted to her honor, but by the symbolic fire which was kept perpetually burning on the hearth or altar by the vestals, her virgin priestesses. From her connection with the domestic hearth, every house was regarded in a certain sense as consecrated to her worship; and in the Roman religion she was connected with the Penates. In Greece her priestesses were widows; in Rome they were maidens, and denominated vestal virgins. In Rome, on March 1 of every year, the sacred fire and the laurel tree shading her hearth were renewed; on June 9, the festival called *Vestalia* was celebrated; and on June 15 her temple was cleansed and purified.

VESTAL VIRGINS (Lat. *vestales*), the priestesses who served in the temple of Vesta, and guarded the sacred fire. The earliest traditions ascribe their origin to a period before the foundation of Rome, because Rhea Sylvia, the mother of Romulus, belonged to their number; but their establishment as a part of the Roman religious worship is usually attributed to Numa. He selected 4 for this office, which number was afterward increased to 6, according to some accounts by Servius Tullus, according to others by Tarquinius Priscus. At first they were selected by the king, but during the republic and empire by the *pontifex maximus*. Originally none but the daughters of freeborn parents could be chosen; but so great was the reluctance of fathers to part with the control of their children, that in the time of Augustus *libertinæ* were also taken. The persons selected were obliged to be from 6 to 10 years of age, without physical blemish; their parents must be residents of Italy who had never pursued any dishonorable profession. Whenever there was a vacancy, it was the custom for the *pontifex maximus* to name 20 damsels from whom one was selected by lot, although this was not necessary if a qualified person was offered voluntarily. Their chief duty was to watch by turns night and day the sacred fire on the altar of Vesta, the extinction of which, whether happening from carelessness or design, was regarded as an omen of terrible evil to the state. The term of service lasted 30 years, the first 10 of which the priestess passed in learning her duties, the next 10 in performing them, and the remaining 10 in instructing others. After that time she might return to the world, and even marry; but the privilege was rarely taken advantage of. The greatest importance was attached to the chastity of a vestal; and when she violated her vow in this respect, she was, according to the law of Numa, stoned to death, but according to the practice from the time of Tarquinius Priscus, she was buried alive in a place called the Campus Sceleratus near the Colline gate. Her paramour was scourged to death in public in the forum. For their labors and the deprivation of the usual privileges the vestals enjoyed compensating honors. They were supported at the public expense, completely released from the control of their parents, could bear testimony in a court of justice without taking an oath, and could make wills; whenever they went abroad, they were preceded by a lictor, and consuls and prætors made way for them, and lowered their fasces; a criminal whom they accidentally met was spared from punishment if they demanded it; and their intercession in behalf of accused persons had great weight. Wills and solemn treaties were intrusted to their care, and conspicuous places were given them at the shows, and by Augustus at the theatres also. The oldest of the vestals was called *vestalis maxima* or *virgo maxima.*

VESTRIS, the name of a family of dancers of Italian extraction, who emigrated from Florence to Paris about 1740, and stood at the head of their profession in Europe during the latter half of the 18th century. The following are its most distinguished members. I. **Angiolo Marie Gaspard**, born in Florence in 1730, died in France in 1809. After a long sojourn in Germany, he made his debut in 1769 at the Italian theatre in Paris, in which he performed with great success until his retirement on a pension in 1780. II. **Gaetano Apolline Baldasare**, brother of the preceding, born in 1729, died in Paris, Sept. 23, 1808. His career at the theatre extended from 1751 to 1781, during most of which time he held the positions of ballet master and first dancer. He was probably the most celebrated member of his profession in Europe during the latter half of the 18th century, and was popularly known as the "god of dancing." His talent was, however, executive rather than inventive; and notwithstanding his instrumentality in perfecting the ballet or dance of action, first conceived by Noverre, he left little worthy of his reputation, his chief compositions being the ballets of *Endymion* and *Le nid d'oiseaux*. He was exceedingly ignorant, not knowing, it is said, how to read or write, and vain to excess. "There are but three great men in Europe," he once observed, "the king of Prussia, M. Voltaire, and myself." His vanity was however so original and amusing as to offend no one, and rather added to his reputation. In other respects he was a man of great honesty and amiability, and devoted to his family. III. **Vestris Allard**, or **Vestris II.**, natural son of the preceding, born in Paris in 1760, died there, Dec. 5, 1842. He made his debut in 1772, and from 1780 to 1818 was first dancer at the opera. He appeared for the last time at the age of 75, at a benefit given to Mme. Taglioni, and won great applause by the grace and agility of his movements. Inferior in dignity to his father, he surpassed him in agility; and the latter once remarked, that he would have remained always in the air had he not been afraid of humiliating his companions. IV. **Auguste Armand**, natural son of the preceding, made his debut in 1800 in a ballet in which his father and grandfather also took part. He had a great reputation throughout Europe in the early part of the present century, and in 1828–'9 appeared in the chief cities of the United States. V. **Madame (Bartolozzi)**, wife of the preceding, born in London in 1797, died in 1858. She was the daughter of Bartolozzi the engraver, was married in 1813, and in 1815 made her first appearance upon the Italian stage as Proserpina in the opera of that name. Subsequently she became one of the most popular English actresses of the day, particularly in male parts, like "Don Giovanni in London," which admitted of a display of her figure. As a vocalist she was distinguished by her execution of ballad music, in which her voice, a sweet and powerful contralto, appeared to great advantage. Late in life she was married to Charles Mathews the younger, and had the management successively of several of the chief London theatres.

VESTRY, a room attached to a church where the ecclesiastical vestments and the sacred vessels are kept; also, in the church of England, the body of the parishioners or their representatives organized for the transaction of parish affairs, who are so called because their sessions are usually held in that room. Their functions are to provide for the maintenance of the church edifice and the due administration of public worship, to elect church wardens, and to administer parish property.

VESUVIUS, a volcano of southern Italy, on the E. shore of the bay of Naples, and about

10 m. E. S. E. from the city. It stands alone on the plain of Campania, upon a base of about 30 m. in circumference. In its upper portion it divides into two peaks, one of which, termed the Somma, attains in the Punta del Nasone the height of 3,747 feet above the sea; and the other, known as Vesuvius, reaches in the Punta del Palo, on the northern brim of the crater, an elevation of 3,949 feet, but varies both in height and shape in consequence of the eruptions of the volcano. Vesuvius is often spoken of by ancient Roman writers, without allusion to its volcanic character; and that such had always been its nature was only inferred from the igneous character of its rocks, as observed by Strabo. Diodorus Siculus remarks that the mountain had "many signs of having been burning in ancient times." Its first recorded eruption occurred in August, A. D. 79; and it was during this that the cities of Pompeii and Herculaneum were buried beneath the ashes. (See HERCULANEUM.) The materials ejected from the mountain were scoriæ and ashes alone, the quantities of which far exceeded its own bulk; and in the occasional eruptions which succeeded, these were the only volcanic products until the year 1066, when the first flow of lava occurred. Its ashes, carried into the upper atmosphere, have been transported to Constantinople, and even to Egypt and Syria. The total number of its great eruptions down to the present time has been about 60, and some among them have been remarkable for the vast movement taking place in a short time. Between the years 1306 and 1631 no eruption occurred, except a slight one in 1500. But throughout this period Etna was in a state of unusual activity, and thus perhaps gave vent to elastic vapors and lava that would otherwise have found a passage through the craters of Vesuvius. In this period also, commencing Sept. 29, 1538, a volcanic cone named Monte Nuovo was raised up in the bay of Baiæ in the course of two days to the height of 440 feet, covering an area 8,000 feet in circumference. The eruption of Vesuvius in 1631 was accompanied with great currents of lava, which flowed over most of the villages at its base, and at the same time torrents of boiling water were sent forth. The eruption of 1779 is described by Sir William Hamilton as among the grandest and most terrible of these phenomena. White sulphurous smoke like heaps of cotton rose up in piles 4 times as high as the mountain, and spread about it to a proportional extent. Into these clouds stones, scoriæ, and ashes were projected to the height of at least 2,000 feet. On subsequent days columns of fire shot forth to full 3 times the height of the mountain. Masses of rock of great size were projected out of the crater, one of which measured 108 feet in circumference and 17 feet in height. In June, 1794, occurred a terrible eruption, which destroyed the town of Torre del Greco. A single stream of lava was estimated by Breislak as containing more than 46,000,000 cubic feet. A vent opened near the bottom of the mountain 2,375 feet in length and 237 feet in breadth, which became filled with lava, and on the hardening of this presented a dike in every respect similar to the ancient basaltic dikes. The eruption of 1822 broke up the whole top of the mountain, and formed an elliptical chasm about 3 m. in circumference, and supposed to be 2,000 feet deep. In May, 1855, the floods of lava destroyed the village of Cercolo; and 11 cones were produced, from all of which floods of lava poured forth. An eruption occurred in June, 1858, another in Aug. 1859, and one of great violence in Dec. 1861. In the last the disturbances commenced on Sunday morning, the 8th, in tremblings of the ground, which were felt at Torre del Greco, and at Resina not so strongly about midday. In the afternoon a large opening was made in the ground a little above Torre del Greco, about ¼ the way up the mountain, which was soon followed by others, from all of which proceeded terrific explosions and jets of flame. Streams of lava poured forth, and on the morning of the 9th lava was flowing in a current half a mile broad. The town of Torre del Greco, which contained about 22,000 inhabitants, was threatened with rapid destruction both from the flow of the lava and the tremblings of the earth. Crevices were opened in the streets sufficient to interrupt the passage of carriages, and the walls of the houses were rent and their roofs opened in wide clefts; at that time few appeared to be habitable, and the people had mostly deserted the town. A quarter of a mile only up the mountain the broad stream of lava was slowly moving down, in consequence of the accessions continually made to it from the numerous and changing craters half a mile further up. The semi-fluid stream was about 25 feet in depth, reaching to the roofs of the houses which it engulfed. Fine black dust was carried up with the matters ejected, and, driven by the north wind over the bay, overhung the whole surface in a dark cloud. It covered the roads several inches deep, and on the houses in Torre del Greco it accumulated to the depth of 4½ inches, and its appearance was very sensible over the ground at Capri and Salerno. The explosions, like the sound of heavy artillery, continued till toward evening, and at night were succeeded by the most brilliant displays of electric lights, forked lightning, and columns of fire and smoke continually rising from the crater. The convulsions continued for several days; and even up to Jan. 1, 1862, the tremblings of the earth had not ceased, and exhalations of gas in the streets of Torre del Greco and near the sea were so strong as to be almost insufferable. The effect of this eruption has been to materially alter the shape of Vesuvius, and it is stated that the old crater has been deepened and 10 new ones have been produced.

VETCH. See TARE.

VETO, a Latin word, signifying "I forbid," which has been introduced into the political language of modern nations to signify the act by which the executive power refuses its sanction to a measure proceeding from the legislative. The first instance of the use of this power was by the tribunes of the people in Rome, who, by pronouncing the word *veto*, could render of no avail the decrees of the senate or the proceedings of the magistrates. The ancient Polish constitution had an abuse of this in the shape of the *liberum veto*, by which any single member of the diet by his *Nie pozwalam* (I do not allow) could hinder the passage of any measure. At the beginning of the French revolution a great discussion arose in the national assembly during the formation of the constitution, as to whether the king should be invested with an absolute or conditional veto. In this debate the populace exerted much influence on the proceedings, and the motion for the conditional veto, or *véto suspensif*, was carried by a vote of 684 to 325; but the absolute veto was restored to the monarchy after the fall of Napoleon. The sovereign of England has theoretically a veto upon the measures of parliament, but it is a power which has not been used for a long period. In Norway the king has a veto; but if 3 successive storthings pass the same measure, it becomes a law in spite of the veto. Something similar was aimed at in Germany in the ephemeral constitution of the empire in 1849. The same rule was adopted in the constitution of the Spanish cortes in 1812. The president of the United States has a veto power, which has very frequently been exercised; but a majority of two thirds in both houses of congress is sufficient to pass any measure over the veto. The same conditional power over the acts of their respective legislatures belongs to the governors of the several states, and to the mayors of cities.

VEUILLOT, Louis, a French author and journalist, born at Boynes, in the department of Loiret, in 1813. He is the son of a poor cooper, and by his own exertions picked up knowledge enough to obtain a place in an attorney's office in Paris. At the age of 19 he appeared in print as a contributor to a provincial ministerial journal called the *Écho de la Seine-Inférieure;* and his articles were signalized by so much vigor and power of invective as to involve him in two duels, one with an actor on account of a theatrical criticism, and another with the editor of the republican *Journal de Rouen.* At the end of 1832 he became the editor-in-chief of the *Mémorial de la Dordogne*, at Périgueux, where he was again engaged in affairs of honor. In 1837 he went to Paris as editor of the *Charte de* 1830, founded by the ministry; and when that journal failed, he became principal editor of *La paix.* Hitherto he had been distinguished for the boldness and scepticism of his writings; but having in 1838 made a visit to Rome during Holy Week, so great an impression was made upon his mind by the scenes of that period that he returned to France a zealous Catholic, and published several religious works. In 1842 he went to Algeria as secretary to Gen. Bugeaud, and on his return became chief clerk in the ministry of the interior. After holding that position 18 months he quitted it for the editorship of the *Univers*, of which in 1848 he became the editor-in-chief. In his management of this organ of the ultramontane party, he assailed with extreme bitterness universities, philosophers, socialists, and revolutionary leaders, and for his course was censured by the archbishop of Paris. His journal was interdicted in many dioceses, and in 1853 the bishop of Orleans expressly forbade his clergy to read it. In 1860, the opinions of the *Univers* and the language in which they were expressed being deemed dangerous, the journal was suppressed by the emperor. Veuillot has written numerous works, relating principally to the tenets of the Roman Catholic church, and often bitterly attacking every thing that came in conflict with the views of the ultramontane party. Among his productions may be mentioned *L'honnête femme* (2 vols. 12mo., 1844); *Les libres penseurs* (1848); *L'esclave Vindex* (1849); *Le lendemain de la victoire* (1849); *Corbin et d'Aubecourt* (1850); *Mélanges religieux, historiques et littéraires* (8vo., vols. i.–vi., 1857–'9); *Ça et là* (2 vols. 18mo., 1859); and *Le parfum de Rome* (2 vols. 8vo., Paris, 1862).—His brother Eugène, born at Boynes in 1818, was in the bureau of the ministry of the interior, and in 1844 became an assistant to his brother in editing the *Univers.* During the Sonderbund war he carried to the Catholics of Switzerland the sum of 100,000 francs collected for them by that journal; and on his return he wrote a *Histoire des guerres de la Vendée et de la Bretagne*, for the purpose of encouraging the insurgents. In 1850 he was charged to carry to the archbishop of Turin the golden cross purchased by another subscription, and in this journey went to Rome, where the pope made him knight of the holy order of St. Sylvester.

VIARDOT, Louis, a French author, born at Dijon, July 31, 1800, studied law, but abandoned that profession for literature. He wrote for liberal journals, and in 1841, in conjunction with Pierre Leroux and Mme. Dudevant, founded the *Revue indépendante.* In 1838 he became manager of the Italian opera at Paris, but on occasion of his marriage with Pauline Garcia in 1840 he left that position to accompany his wife in her professional journeys through Europe. Among his works are: *Essai sur l'histoire des Arabes et des Maures d'Espagne* (2 vols. 8vo., 1832); *Étude sur l'histoire des institutions et de la littérature d'Espagne* (1839); and *Les Jésuites jugés par les rois, les évêques et les papes* (1857). He has also written extensively on the great collections of pictures in England, Spain, France, Belgium, Germany, and Russia, has made valuable translations from the Spanish and Russian, and has contributed much to reviews.

VIARDOT, Pauline. See Garcia.

VIATICUM (Lat., provision made for a journey, from *via*, way), a name applied in the ancient church to both baptism and the eucharist, "because," as Bingham says, "they were equally esteemed men's necessary provision and proper armor, both to sustain and conduct them safely on their way in their passage through this world to eternal life." More strictly, the term denoted the eucharist given to persons in immediate danger of death, and in this sense it is still commonly used in the Roman Catholic church.

VIATKA, a government of European Russia, bounded N. W. and N. by Vologda, E. by Perm, S. by Orenburg and Kasan, and W. by Nijni Novgorod and Kostroma; area, 55,356 sq. m.; pop. in 1856, 2,051,914, among whom are many Tartar tribes and about 50,000 Mohammedans. The area has since been reduced to 16,299 sq. m.; pop. in 1858, 876,116. The surface is mountainous in the E., where ramifications of the Ural range extend, and level or undulating elsewhere. The principal rivers are the Kama, an affluent of the Volga, dividing it from Orenburg, and its tributaries, the Viatka, Tcheptza, and Kilmes, all navigable. The climate is severe. Grain, flax, hemp, furs, iron, and copper are produced, and woollen and linen goods and iron and copper ware are manufactured.—The capital, Viatka, is situated on the left bank of the river of that name, in lat. 58° 24′ N., long. 50° E.; pop. about 9,000. There are several convents, schools, and factories.

VIBRIO (Müll.), the type of the *vibrionia*, a family of minute colorless organisms, arranged by Ehrenberg and Dujardin among infusorial animals from the possession of apparently voluntary motions, but now generally considered as microscopic plants, compound or confervoid algæ of the tribe *oscillatoriaceæ*. They are exceedingly minute, requiring the highest powers of the microscope to make out any structure; they appear like slender lines, straight or sinuous, composed of minute joints, without any visible organs of motion, though possessing contractility; they seem to be propagated by the formation of new joints and subsequent separation at one of the articulations; their structure is best seen when dried. They appear suddenly in artificial infusions, and grow rapidly in such immense numbers as to form a thick scum on the surface; they are also found in the tartar on the teeth, in purulent discharges, and in other morbid fluids. The species of the genus *vibrio* have an undulatory and sinuous motion, like a serpent; in *spirulina*, which is coiled in a long spiral, the movements are gyratory and oscillating. In *vibrio* there is a single, straight row of filaments, without apparent sheath; *V. subtilis*, about $\frac{1}{430}$ of an inch long and $\frac{1}{24,000}$ wide, is aquatic and found in pools; some of the other species are probably the earlier stages of other unknown algæ.—The so called "eels" of vinegar and sour paste, sometimes erroneously styled vibrios, are nematoid worms or entozoa; they were once popular microscopic objects. They belong to the genus *anguillula* (Müll.); the *A. aceti* or vinegar worm is $\frac{1}{30}$ to $\frac{1}{17}$ of an inch long, and the *A. glutinis* or paste worm $\frac{1}{15}$ of an inch; their absence in vinegar is due to the freedom from mucilage and the usual addition of a little sulphuric acid.

VIBURNUM. See Snowball.

VICAR, a person appointed as deputy to another to perform his functions in his absence, or under his authority. A vicar in the church of England is a priest holding a parish, the revenues of which partly belong to another body or corporation, and who is supported by the lesser tithes, or a special endowment. A vicar-general in the Roman Catholic church is a priest appointed by the bishop to act as his deputy in the government of the diocese, and in matters not demanding full episcopal functions.

VICAT, Louis Joseph, a French engineer, born in Grenoble, March 31, 1786, died in Paris, April 10, 1861. He was educated at the polytechnic school, paid special attention to the subject of building-lime and mortar, and in 1818 published *Recherches expérimentales sur les chaux de construction, les betons et les mortiers* (4to.). In 1822 he introduced at Souillac the system of founding the piers of bridges on masses of concrete sunk under water, in cribs or close-piled enclosures; and his experiments in connection with this work led him to propound the theory, which subsequent inquiries have fully confirmed, that the hardening of mortar depends on the combination which takes place in it between the lime and the silicate of alumina it contains. He published the results of his observations, and contributed papers to the *Annales des ponts et chaussées* on the strains to which suspension bridges are exposed, on the resistance of iron-wire ropes, on the compression of solid bodies, and on the statistics of the lime-producing formations of France. He received numerous honors from his own and foreign governments, and in 1843 the legislative assembly voted him a pension of 6,000 francs.

VICENTE, Gil, a Portuguese poet, and father of the Portuguese drama, the date of whose birth is not known, died in 1557. The cities of Guimaraes, Barcellos, and Lisbon claim the honor of being his birthplace. He belonged to an old and noble family, and by the wishes of his parents went to the university of Lisbon to study jurisprudence, which he soon abandoned for the drama. His first work was a monologue written in 1502 on occasion of the birth of Prince John, afterward John III., which was recited before the royal family, and pleased the queen mother so much that she requested the author to repeat it at Christmas, adapting it to the birth of the Saviour. From this time he continued to produce dramatic works at the court of King Emanuel and his successors until his death. Erasmus declared him the first dramatic poet of his time, and learned Portuguese for the purpose of reading his works. He wrote 42 pieces, which are arranged as *autos* or miracle plays, comedies, tragi-comedies, and farces, and taken together are the best works in the dramatic literature of Portugal. Of the number, however, 10 are written wholly and 15 partly in the Castilian language. In 1562 his youngest son published his works at Lisbon in folio, and a reprint, much mutilated by the inquisition, appeared in 4to. in 1586. In 1834 Barreto Feio and Monteiro published an edition of his works at Hamburg in 3 vols. Vicente has been called the Plautus of Portugal.

VICENZA, a province of Austrian Italy, in the government of Venice, bounded N. by the Tyrol, N. E. by Belluno, E. by Treviso, S. E. and S. by Padua, and W. by Verona; area, 1,083 sq. m.; pop. about 300,000. The principal towns are Vicenza and Bassano. In the N. the surface is traversed by several offsets from the Alps, but in the S. it is level or undulating. The most important rivers are the Bacchiglione and its affluent the Brenta. There are considerable tracts of forest with much valuable timber; abundant chestnut trees furnish food for a great part of the population. The level country is remarkably fertile. A large quantity of silk is produced. Cattle and sheep are numerous. Several coal mines are worked, and silk, linen, and woollen goods, hardware, porcelain, paper, gold and silver articles, and leather are manufactured. The railway which connects Venice and Milan crosses the province.—Vicenza (anc. *Vicentia*), the capital, is situated in a plain at the junction of the Retrone and Bacchiglione, 49 m. W. from Venice; pop. about 33,000. The rivers are crossed by 9 bridges, and the city is surrounded by dilapidated walls and dry moats, about 3 m. in circumference and defended by a fort. The cathedral and several other churches contain valuable paintings. The Teatro Olimpico, begun by Palladio, is built in imitation of the ancient Roman theatres, with the seats rising one above another in semicircles. (See Theatre.) The Piazza dei Signori contains two fine columns in imitation of those in the Piazza San Marco in Venice, and a *campanile* about 20 feet square at the base and 300 feet high. There are manufactories of silk and woollen goods, gold and silver articles, hardware, earthenware, and leather.—Vicenza was founded about a century B. C., and became a Roman *municipium*. It was sacked by Alaric in 401, and subsequently by Attila, the Lombards, and the emperor Frederic II. In the early part of the 15th century it came into the possession of the Venetians, who held it till the fall of the republic in 1797. It afterward formed part of the kingdom of Italy, and it was united to Austria at the peace of 1815.

VICENZA, Duke of. See Caulaincourt.

VICHY, or Moutiers les Bains, a town of France, in the department of Allier, on the right bank of the river Allier, which is here crossed by a suspension bridge, 1 m. W. from Cusset; pop. 1,500. It has long been famous for its thermal springs, and has numerous pleasant residences and hotels for the accommodation of visitors. There are 8 principal springs, discharging in the aggregate about 27½ gallons of water a minute, and ranging in temperature from 66° to 111° F. The waters are acidulous and alkaline, their principal ingredients being carbonate of soda and carbonic acid gas, and the quantity of the resulting bicarbonate of soda to a pint varies from 39 to 50 grains in the different springs. They are considered particularly efficacious in chronic disorders of the liver and digestive organs, obstructions of the spleen, diseases of the kidneys, gravel produced by uric acid, and gout. There is a large and magnificent bath house or *établissement thermal*, which belongs to the government. The number of visitors at Vichy during the season, which lasts from the end of May to the end of August, is about 3,000.

VICKSBURG, a city and port of entry of Warren co., Miss., situated on the Mississippi river, 408 m. above New Orleans, and 44½ m. W. from Jackson, with which it is connected by the southern Mississippi railroad; pop. in 1860, 4,591. The site of the city is elevated and uneven, the residences being on the bluff, and the business portion of the town on the river bank below. It is connected with the New Orleans and Mississippi central railroad (from New Orleans to Cairo) by the railroad to Jackson, and with Shreveport, La., and Marshall, Texas, by another railroad, partly finished. It is the chief commercial town between Memphis and New Orleans, and exported before the civil war from 100,000 to 130,000 bales of cotton annually. Beside the county buildings, it has 5 churches and several schools and seminaries. Three newspapers were published here in 1860.—Vicksburg was fortified by the confederates at an early period of the war of secession; and soon after the occupation of New Orleans by the federal forces, an attack was made upon it by Capt. Farragut's fleet and Capt. Porter's mortar flotilla. The bombardment was commenced June 28, 1862, and a day or two afterward the gunboat fleet under Capt. C. H. Davis arrived from the upper Mississippi to participate in the attack. After being continued with varying energy at intervals for some four weeks, it was finally suspended about Aug. 1, it being found impracticable to carry and hold the town without the coöperation of more considerable land forces than were then at the disposal of the federal commanders. On the opposite bank of the river a peninsula 3 m. long and about 1 m. wide is formed by the Mississippi doubling upon its own course. To facilitate his operations, Capt. Farragut dug a new channel for the stream across the head of this peninsula, but there was not a sufficient height of water in the river to render this method of converting Vicksburg into an inland town successful at that time.

VICO, Francesco de, an Italian astronomer, born in Macerata, May 19, 1805, died in London, Nov. 15, 1848. He entered the society of the Jesuits in 1823, studied and taught at the Roman college, and in 1835 was appointed assistant to Father Dumouchel, superintendent of the observatory. The same year he was the first to discover the return of Halley's comet. He was shortly afterward appointed chief of the observatory, and one of his first duties was to correct the accepted latitude of Rome, a task which he accomplished after having made 8,000 observations. A work by which he gained still higher reputation was a course of observations for the purpose of ascertaining the time of rotation of the planet Venus upon its own axis. He subsequently turned his attention toward the satellites and inner ring of Saturn, and also toward the nebulæ, upon which he wrote some detailed reports. During the years 1845, '6, and '7 he discovered 8 comets, of 7 of which he is admitted to have been the first observer. The periodical called the *Raccolta scientifica* was founded principally by him, and he frequently contributed to it. When the Jesuits were driven from Rome by the revolution of 1848, he went to England, and afterward came to the United States. He had accepted a proposal to become director of an observatory to be erected under his auspices in the state of New York, and returned to England to obtain the necessary instruments, when he was attacked by his last illness. He had made some progress toward constructing an improved system of astronomical maps.

VICO, Giovanni Battista, an Italian critic, historian, and jurist, born in Naples in 1668, died Jan. 20, 1744. He was educated by the Jesuits and studied law, but never practised. For 9 years he was tutor in jurisprudence to a nephew of the bishop of Ischia, and then returning to Naples obtained a professorship of rhetoric, which he held for 40 years, eking out his pitiful salary by giving private lessons in Latin. In 1735, after the accession of the Bourbons to the throne of Naples, he was appointed historiographer to the king. While Vico recognized the service which the Cartesian philosophy had rendered toward the enfranchisement of the human mind, he attacked the exclusive use of the "geometric" method of reasoning which the disciples of that school applied to every class of problems, and which he regarded as no better than a turning back from common sense to the sterile forms of scholasticism. Theology, law, mythology, philology, and philosophical history were to be studied not singly but as component parts of one grand science. Philology especially was capable of throwing great light upon the opinions and condition of nations in pre-historic times, and it might be shown that peoples the most widely separated in place and time had followed nearly the same course in the development of their languages and political conditions. This he explained by proving that in the divine intellect prior to creation there existed an eternal idea of the history of mankind, and in the working out of this history through the progress and revolutions of states and epochs is seen one o_ the most remarkable manifestations of divine providence. In applying these principles Vico arrived at opinions in philology, mythology, and jurisprudence, which have been strikingly confirmed by modern critical research. In his treatise *De Antiquissima Italorum Sapientia* he first showed the intimate connection between philology and history; and in his essays *De uno Juris universi Principio*, and *De Constantia Jurisprudentis* (1721), he treats of the dependence of law upon political events. His whole system was unfolded in his *Scienza nuova* (1725), by which, though it was neglected until long after his death, he is now ranked as one of the most original thinkers of modern times. One of the best editions of his works is that of Ferrari (7 vols. 8vo., Milan, 1834–'7).

VICQ-D'AZYR, Félix, a French physician, born in Valogne, Normandy, April 28, 1714, died in Paris, June, 20, 1794. After graduating at Paris, he began there a course of lectures on human and comparative anatomy at the school of medicine, which on account of a difference with the authorities he was subsequently obliged to give up. In 1774 he was elected a member of the academy of sciences, and the year following was sent to the south of France for the purpose of investigating the character of a murrain raging among the cattle in that region, and effecting its extermination. On his return he proposed a plan for a similar investigation of all future epidemics, and in 1776, with Lassonne, first physician to the king, founded the academy of medicine, of which he became perpetual secretary. In 1788 he was elected a member of the French academy as successor of Buffon, and delivered an oration in honor of his predecessor, which was one of the most remarkable of his productions. In 1789 he was appointed first physician to the queen. To divert the suspicion of the revolutionary party, he participated in the festival of the Supreme Being, from which he came back ill and died soon after. His chief works are: *Observations sur les moyens pour préserver les animaux sains de la contagion* (12mo., Bordeaux, 1774); *La médecine des bêtes à cornes* (2 vols. 8vo., Paris, 1781); and *Traité d'anatomie et de physiologie*, with 35 colored plates (fol., Paris, 1786). An incomplete edition of his works was published by Moreau de la Sarthe (6 vols. 8vo., Paris, 1805).

VICTOR (Victor-Perrin), Claude, duke of Belluno, a French marshal, born at La Marche, Lorraine, Dec. 7, 1764, died in Paris, March 1, 1841. He enlisted as a drummer at the age of 17, and was still a private at the expiration of his 8 years' service. In 1792 he reënlisted as a volunteer, reached in a few months the rank of major, was severely wounded at the siege of Toulon (1793), and was promoted. He joined the army in the eastern Pyrénées with the rank of brigadier-general; was placed in command of the vanguard in the army of the Alps under Schérer; and distinguished himself in Lombardy under Bonaparte, and was promoted to the rank of general of division in 1797. After serving in La Vendée for about a year, he returned to Italy in 1799, worsted the Russians on the Po, and participated in nearly all the battles of that disastrous campaign. He adhered to Bonaparte on the 18th Brumaire, accompanied him in 1800, displayed great intrepidity in the battle of Marengo, and received a sword of honor as his reward. In 1805 he was sent as minister plenipotentiary to Copenhagen. He resumed active service in the campaign against Prussia (1806), gained new laurels at Jena and Pultusk, was for a while a prisoner in the hands of Schill, the celebrated partisan leader, made an unsuccessful attempt against the town of Graudenz, and behaved so brilliantly in the battle of Friedland (1807) as to win the baton of marshal of the empire and the title of duke of Belluno. From 1808 to 1812 he served in Spain, where he won the victories of Ucles and Medellin, but was defeated by Wellington at Talavera; expelled the Spaniards from their strong position at Peña-Perros, invaded Andalusia, and laid siege to Cadiz. In 1812 he was placed in command of the 9th corps in the army that invaded Russia, and evinced great firmness during the retreat, especially at the crossing of the Beresina. In the following years he led the 2d corps, which greatly contributed to the victory of Dresden, and participated in the battles at Wachau, Leipsic, and Hanau. During the campaign of 1814 in France, he fought at St. Dizier and Brienne; but having permitted the enemy to cross the Seine at Montereau-sault-Yonne, his command was taken from him; he nevertheless participated in most of the battles that followed, and was severely wounded at Craonne. He was among the first to desert the fallen emperor, and on the return of Napoleon from Elba followed Louis XVIII. to Ghent. After the battle of Waterloo, he was made a peer and appointed one of the 4 major-generals of the royal guard. Being placed at the head of a committee of investigation, he displayed great severity against such of his colleagues as had served Napoleon during the Hundred Days. In 1821 he was appointed minister of war, and in 1823 accompanied the duke of Angoulême in the invasion of Spain, in the capacity of major-general. He lost this post and his seat in the cabinet on account of his alleged connivance with Ouvrard, the celebrated contractor, but was sent as ambassador to Vienna, where the emperor refused to receive him. After his return home he lived in comparative retirement, but kept his rank of major-general in the royal guard until the fall of Charles X. in 1830. He mingled in some political intrigues under Louis Philippe, and passed his latter years in oblivion. He left *Mémoires*, one volume of which was published (8vo., Paris, 1847) by his son, VICTOR FRANÇOIS, who was for a while senator under Napoleon III., and died in 1853.

VICTOR, SEXTUS AURELIUS, a Latin historian, who flourished about the middle of the 4th century. The emperor Julian made him governor of a division of Pannonia, and Theodosius appointed him city prefect. He was consul with Valentinian in A. D. 373. He wrote *De Cæsaribus*, a series of short biographies of the emperors from Augustus to Constantine (English translation, London, 1693); and other works are ascribed to him upon doubtful authority.

VICTOR AMADEUS, dukes of Savoy and kings of Sardinia. See SAVOY, and SARDINIAN STATES.

VICTOR EMANUEL I., king of Sardinia, born in 1759, died at Moncalieri, near Turin, Jan. 10, 1824. He was the second son of Victor Amadeus III., and succeeded his brother Charles Emanuel IV., who abdicated in his favor in March, 1802. The French were then masters of all the continental part of the Sardinian states, and Victor Emanuel, after a residence of 4 years in Naples, in the vain hope of recovering them, retired in 1806 to the island of Sardinia, where he remained under the protection of Great Britain. It was not until 1814 that he was enabled to return to Turin. By the treaty of Vienna he ceded to Geneva the circles of Carouge and Chesne, and obtained the territory of Genoa. He pursued an extreme reactionary policy, established a strict censorship of the press, and laid various restrictions upon education; but the people had been too long accustomed to liberal ideas under the French rule to be willing to see the old order of things restored, and in March, 1821, rose and demanded a constitution. Unable to resist and unwilling to grant the demand, he abdicated, March 13, in favor of his brother Charles Felix, and passed the rest of his life in retirement.

VICTOR EMANUEL II. (VITTORIO EMMANUELE MARIA ALBERTO EUGENIO FERDINANDO TOMMASO), king of Italy, formerly king of Sardinia, born March 14, 1820. He is the eldest son of Charles Albert and Theresa, daughter of the late grand duke Ferdinand of Tuscany. He received a careful education both in books and in the art of war, and in 1842, being then duke of Savoy, was married to the archduchess Adelaide of Austria. When the revolution broke out in 1848, he took command of the brigade of Savoy, and followed his father to the field, participating in the battle of Goito, where he received a ball in the thigh, and winning the admiration of the army by his personal valor at the disastrous battle of Novara, March 23, 1849. Immediately after the defeat of this day, Charles Albert abdicated in favor of his son, who thus came to the throne with a peace to make with a victorious enemy and a fierce conflict of factions to appease at home, and suspected by a large part of his subjects, who saw in him nothing but the husband of an Austrian princess. The selection of his first cabinet under D'Azeglio tended to reassure the liberals. He soon effected a reorganization of the finances and of the army, signed a peace with Austria, and under the influence of Cavour, who till his death remained the principal adviser of the king, assailed the privileges of the clergy, secularized the property of the church, and took from the religious associations the monopoly of education which they had hitherto enjoyed. Excommunicated by the pope on account of these measures, he issued a protest in the form of a *memorandum;* and when he lost within a brief period (1855) his mother, his wife, his brother, and his youngest child, and himself fell dangerously ill, the ultramontane party saw in these misfortunes a proof of the anger of Heaven. By a treaty signed April 10, 1855, he joined the Anglo-French alliance against Russia, and sent to the Crimea a contingent of 17,000 men under Gen. La Marmora. He thus greatly raised the position of Sardinia among the European states, and on a visit in the same year to Paris and London was received by the people of both capitals with the greatest enthusiasm. The marriage of his daughter Clotilda to Prince Napoleon (Jan. 1859) was followed almost immediately by the war of Italian independence, in which France and Sardinia took the field together against Austria. Victor Emanuel, invested by his parliament with dictatorial powers, led his troops in person, accompanied by his eldest son, Prince Humbert, to whom, though he was only 15 years old, he gave the command of a brigade. He showed great intrepidity at the battle of Palestro, supported McMahon at Magenta, entered Milan with the French emperor, and on the field of Solferino found himself face to face with the Austrian general Benedek, whom he defeated after a severe fight. The preliminary peace of Villafranca seemed to have overthrown his aspirations for the union of Italy; but by right of revolutions in Tuscany, Parma, Modena, Sicily, Naples, and the Papal States, in all which the populace decided by ballot for annexation to Sardinia, he became master of the whole of Italy except the government of Venice, reserved to Austria by the treaty of Zürich, and a small territory around Rome which is still (May, 1862) in the possession of the pope. The annexation of the Papal States was not effected without the intervention of his army, which, under Cialdini, crossed the frontier in Sept. 1860; and the revolution in the Two Sicilies was directed by Garibaldi, accompanied by whom Victor Emanuel entered Naples in triumph Nov. 7. He took the title of king of Italy March 17, 1861. He is also titular king of Cyprus and Jerusalem. (See ITALY, PAPAL STATES, SARDINIAN STATES, SAVOY, SICILIES, THE TWO, &c.) The king has 5 children: Clotilda, the wife of Prince Napoleon Jerome, born in 1843; Humbert, prince of Piedmont, 1844; Amadeus, duke of Aosta, 1845; Otho, duke of Montferrat, 1846; and Maria Pia, 1847.

VICTORIA, a S. co. of Texas, bounded E. in part by Garcitas creek, and S. W. by Coleto creek and Guadalupe river, the latter also intersecting it; area, about 775 sq. m.; pop. in 1860, 5,675, of whom 1,413 were slaves. The surface is low and level, and the soil fertile. The productions in 1850 were 54,110 bushels of Indian corn, 1,050 of sweet potatoes, 270 bales of cotton, and 120 hogsheads of sugar. Capital, Victoria.

VICTORIA, a central co. of Upper Canada, containing the Sturgeon, Cameron, Balsam, and other small lakes, connected with the Scugog river; area, 749 sq. m.; pop. in 1861, 22,948. The Victoria and Port Hope railway traverses the S. part of the county, and connects it with the Grand Trunk railway and Lake Ontario. Capital, Lindsay.

VICTORIA, or PORT PHILLIP, a British colony, occupying the S. E. part of Australia, between lat. 34° and 39° S., and long. 141° and 150° E., bounded N. E. and N. by the colony of New South Wales, W. by South Australia, and S. by the Pacific ocean and Bass's strait, which separates it from Tasmania; extreme length, 500 m., breadth, 300 m.; area, 98,000 sq. m.; pop. in 1860, 544,677. The settled part of the colony comprehends principally the E. and S. portions, and is divided into 24 counties. Melbourne is the capital, and the other towns of importance are Geelong, Portland, Belfast, Warnambool, Ballarat, Alberton, Avoca, Ballan, Beechworth, Benalla, Bendigo, Brunswick, Buninyong, Castlemaine, Chepstow, Colac, Flemington, Kilmore, Kyneton, Mount Alexander, Port Fairy, Prahran, Richmond, Sandhurst, and Wangaretta. The entire coast line extends about 600 m. The W. part is generally low, and the principal harbors on that side of Cape Otway are Portland, Port Fairy, and Warnambool. Between Cape Otway and Wilson's promontory the coast is high, rising in some places 500 and 1,000 feet above the level of the sea. This part contains several fine bays and anchorages, the most important of which are Port Phillip and Western Port. Wilson's promontory consists of a mass of granite rising 3,000 feet above the sea, connected with the mainland by a low sandy isthmus. Immediately N. of it is situated Corner basin or inlet, well protected by sandy islands. From this to Cape How, the N. E. extremity of the colony, the coast is sandy, with several lagoons, the largest of which is called Lake King. The Australian Alps, which extend from N. to S. through New South Wales, cross the N. E. frontier of Victoria, and pursue a S. W. direction to the coast of Bass's strait, sending many offsets principally to the N. and W., and covering an area of about 7,000 sq. m. The range attains an elevation of 6,500 feet near the frontier, but diminishes gradually toward the S. W. Another range called the Grampians extends from the W. boundary near lat. 37° S. in an E. direction till it meets the offsets from the Australian Alps N. E. of Port Phillip. It forms 3 distinct ridges, called the Grampians proper, the Serra, and the Victoria range. The greatest elevation attained is 4,500 feet. In the

S. there is a remarkable summit called Mount Abrupt, 1,700 feet in perpendicular height, containing a crater 446 feet broad and 80 feet deep. The Australian Alps and the Grampians together form the watershed of the colony, the drainage of the country to the N. flowing to the Murray, and that of the S. to the ocean. The Murray forms the whole of the N. boundary line, and is navigable for several hundred miles during the winter. The chief tributaries which it receives from Victoria are the Loddon and Goulburn, its principal feeders joining it from New South Wales. The rivers which flow to the sea, though numerous, are all small, with the exception of the Glenelg, which forms part of the W. boundary line. Nearly all the streams dry up in summer, leaving a chain of ponds along their beds. Lakes are remarkably numerous, but many of them are also dry in summer. Lake Corangamite, about 50 m. W. from Geelong, is 90 m. in circumference, and very salt. Lake Colar, 8 m. E. from this, is 10 m. in circumference, and the water is fresh and good.—The interior of the country is generally diversified, and so fertile that the first explorer gave to it the name of Australia Felix. There are numerous open grassy plains dotted like parks with trees. In some parts of the country and on the hills there are thick forests of *eucalypti*, *Banksiæ*, *casuarinæ*, and other trees peculiar to Australia. The prevailing rocks are granite, syenite, quartz, mica schists, sandstone, clay slate, and ironstone. Rich copper ore is found on the banks of the Yarra Yarra, and coal, traces of lead, and manganese near Cape Otway. The great mineral wealth of Victoria, however, is in gold, which was discovered in 1851. It is found chiefly in the hilly and mountain regions lying W. and N. W. from Melbourne, and about the head streams of the Murray in the Australian Alps. At Ballarat, 40 m. N. N. W. from Geelong, it is found in the ranges and flats and the beds of water courses.—The climate is mild, the average temperature of summer being 65°, and that of winter 48°. Hot N. winds are more frequent than in any other of the Australian colonies; but they seldom last more than from 20 to 30 hours, and are succeeded by cool breezes from the S. W. and S. The average fall of rain is 30 inches, and there are occasional falls of snow. Though the soil is generally light, there are tracts in all parts of Victoria well suited for the growth of different kinds of grain and potatoes. All the ordinary fruits and vegetables of temperate climates have been introduced and succeed well. The vine is cultivated to some extent. The native animals and birds are the same as those in other parts of Australia. A species of codfish of a large size is found in the rivers in the N. part of the colony, and fish are remarkably abundant on the coasts, more particularly in Bass's strait. All the domestic animals and fowls have been introduced, and a society has been formed at Melbourne for importing the best song birds of Great Britain. Cattle and sheep are here larger and fatter than in any of the neighboring Australian colonies.—The aborigines of Victoria differ little from those of other parts of the S. portion of Australia. Their numbers are fast decreasing, and they have disappeared from many parts of the country where they were formerly numerous. Among the colonists, the English and Scotch and their descendants largely predominate; about 20 per cent. are Irish, and 7 per cent. belong to other countries. In June, 1855, the population of the gold fields amounted to 151,684, of whom 102,644 were men, 21,855 women, 27,185 children, and 21,515 Chinese, who had only 3 women and 2 children. In June, 1857, the population of the gold fields was 176,585.—The manufactures of the colony are unimportant. The exports consist chiefly of gold, wool, tallow, hides, and a few other articles of raw produce. The exports of gold since its first discovery have been as follows: 1851, £438,777; 1852, £6,135,728; 1853, £8,664,529; 1854, £8,255,560; 1855, £11,363,980; 1856, £12,105,224; 1857, £10,918,620; 1858, £10,147,932; 1859, £9,122,100. The total value of the exports amounted to £14,363,250 in 1856; and in 1857 the value of both the export and import trade amounted to £31,000,000. Melbourne is connected with the capitals of the colonies both to the E. and W. of it by telegraph, and with Hobson's bay and Geelong by railways, and others are in course of construction to the frontiers of New South Wales and the gold fields. Good roads extend to different parts of the colony.—Port Phillip was first discovered by Lieut. Murray in Jan. 1802, and was shortly afterward entered by Capt. Flinders, who named it in honor of the first governor of New South Wales. For many years it was only occasionally visited. At length, a settler from Tasmania having purchased an extensive tract of land from the aborigines, the British government refused to recognize his title, and the entire district was taken possession of by the crown. In 1835 many colonists from Tasmania brought over flocks and herds to the pasture lands of Port Phillip; and large numbers of the squatters of New South Wales drove their cattle into the country from the north. In 1839 a civil superintendent was appointed, and the district became a dependency of New South Wales. In 1850 it was constituted a distinct province under the name of Victoria, with a government after the same model as that of the parent colony.

VICTORIA, Alexandrina, queen regnant of Great Britain and Ireland, 6th sovereign of the house of Hanover, and queen of Hindostan, born at Kensington palace, May 24, 1819. She is the daughter of Edward, duke of Kent, 4th son of George III., and the princess Victoria Mary Louisa of Saxe-Coburg-Saalfeld, relict of the hereditary prince of Leiningen. Her father died in Jan. 1820, and as neither George IV. nor his next brothers, the dukes of York and

Clarence, had surviving legitimate issue, she soon came to be looked upon as the probable future sovereign of the British empire, though she did not become heir presumptive to the throne until the accession of her uncle William IV. in 1830. Her education was intrusted to the duchess of Northumberland (now dowager duchess). On the death of William IV. without issue, June 20, 1837, the crowns of England and Hanover, which had been worn by the same person since the accession of George I. (1714), were separated, the former devolving upon the princess Victoria, and the latter, by virtue of the Salic law in force in Hanover, falling to the duke of Cumberland, the late king's younger brother. Queen Victoria was crowned in Westminster abbey, June 28, 1838. When she came to the throne the whig ministry of Lord Melbourne was in power. Her sympathies were with that party, and they retained the administration, in spite of a majority against them in the commons, until 1841. The first years of the queen's reign were disturbed by the rebellion in Canada, which at one time threatened to bring on a war with the United States, the anti-corn-law league under the lead of Mr. Cobden, the chartist agitation, the Jamaica question, Irish affairs, the Afghan war (1839–'42), the war with China (1840), and the prospect of a general European war caused by the alliance of Great Britain, Prussia, Austria, and Russia to compel Mehemet Ali, who was promised aid from France, to restore Syria to the sultan. The revenue at the same time was steadily falling off, the deficit in 1841 being about £2,000,000. On Feb. 10, 1840, Queen Victoria was married to Prince Albert of Saxe-Coburg-Gotha. On Aug. 30, 1841, Lord Melbourne resigned, and was succeeded by Sir Robert Peel, who retained office until 1846. He succeeded in placing foreign affairs on a satisfactory footing, though his domestic administration was less fortunate. The ministry of Lord John Russell (1846–'52) carried the empire safely through the Irish famine which existed when it entered into office, and the dangers of the year of revolutions (1848), broke up the young Ireland party, and repealed the navigation laws (1850). The conservatives held office under Lord Derby from Feb. to Dec. 1852, and were succeeded by the Aberdeen ministry, formed by a coalition of whigs, radicals, and conservatives. Forced to give way before the pressure of public opinion on the question of the management of the Russian war, they were followed, in Feb. 1855, by the Palmerston ministry, who brought to a successful close the Russian, Persian, and Chinese wars, and were struggling with the great Indian rebellion when, in Feb. 1858, they were defeated on a bill to punish conspiracies against foreign potentates, and resigned. Lord Derby held office until July, 1859, when Lord Palmerston was reinstated at the head of a cabinet which is still (May, 1862) in power. The rebellion in India having been put down, the possessions of the East India company were transferred to the crown in Aug. 1859, and Queen Victoria was proclaimed queen of Hindostan. From the day of her accession to the throne Queen Victoria has enjoyed to the fullest extent the respect and affection of her subjects. Several attempts, however, have been made to assassinate her: one in June, 1840, by a crazy lad named Oxford; another in May, 1842, by John Francis, who was sentenced to be hanged for the offence, but the sentence was commuted to transportation for life; and a third in July of the same year, by one J. W. Bean, whose only punishment was 18 months' imprisonment. Queen Victoria travels frequently both in her own dominions and abroad. She visited Louis Philippe at the château d'Eu and the king of the Belgians at Ostend in 1843, Germany and France in 1845, the queen of the Belgians in 1850, Brussels in 1852, the emperor Napoleon at Paris in 1855, and Saxe-Coburg-Gotha in 1860. Her mother, the duchess of Kent, died March 6, 1861, and the prince consort Dec. 14 the same year. The queen has had 9 children, all of whom are living: Victoria, born in 1840, married in 1858 to the crown prince of Prussia; Albert Edward, prince of Wales, born in 1841; Alice, 1843, married July 1, 1862, to Prince Louis of Hesse; Alfred, 1844; Helena, 1846; Louisa, 1848; Arthur, 1850; Leopold, 1853; and Beatrice, 1857.

VICUÑA. See LLAMA.

VIDA, MARCO GIROLAMO, an Italian poet, born in Cremona in 1480, died in Alba, Sept. 26, 1566. He studied at Padua and Bologna, and entered the order of the canons of St. Mark at Mantua. About the beginning of the pontificate of Leo X. he removed to Rome, where he became a canon of St. John Lateran. To enable him to pursue his poetical studies more freely, the pope bestowed upon him the priory of San Silvestro at Frascati. Clement VII. appointed him apostolic prothonotary, and in 1532 made him bishop of Alba in Piedmont. He was one of the most learned scholars and elegant writers of his age, and his Latin verse approached nearer to the excellence of classical poetry than that of almost any other modern author. By his poem on the life of Christ, the *Christias*, written in imitation of the style of Virgil, he acquired the reputation of "the Christian Virgil." He wrote chiefly in Latin, but left also some works in Italian. His best production is a metrical treatise *De Arte Poetica* (Rome, 1527), which, as well as the *Christias*, has been translated into English; but his short Latin poem on the game of chess, *Scacchia Ludus*, is better known to English readers through the translation by Oliver Goldsmith.

VIDAL, FRANÇOIS, a French socialist writer, born at Coutras, in the department of Gironde, in 1814. In 1835 he published a work entitled *Des caisses d'épargne*, in which he urged the propriety of using the moneys accumulated in the savings banks for the organization and working capital of workshops for mechanics. Soon afterward he became editor of the *Démocratie pacifique* newspaper, in which he exhibited his preference for socialism and the intervention of the state in the relations of labor and capital, and opposed many of the doctrines of the Fourierists. In 1846 he published his most elaborate work, *De la répartition des richesses, ou de la justice distributive en économie sociale*, in which he examines and compares the theories of the political economists and those of the socialists. Louis Blanc appointed him secretary of the commission of the Luxembourg in 1848, and in the same year appeared his *Vivre en travaillant: projets, vues et moyens de réformes sociales.* In 1849 he associated himself with M. A. Toussenel in the publication of a weekly journal, *Le travail affranchi.* Having been elected to the legislative assembly by the departments of the Seine and Bas-Rhin in March, 1850, he sat for the former constituency until the *coup d'état* of Dec. 1851, when he retired from public life. Beside the above named works, he has published *Organisation du crédit personnel et réel, mobilier et immobilier* (8vo., 1851), and *Théologie de la religion naturelle* (18mo., 1860).

VIDAURRI, Santiago, a Mexican political and military leader, born in the north-eastern part of Mexico about 1810, first became distinguished in the revolution which resulted in the overthrow of Santa Anna in 1855. While Alvarez was contending against that dictator in the south-west, Vidaurri issued a *pronunciamiento* and took the field in the north. In the junta of Cuernavaca, Oct. 4, 1855, Vidaurri was a candidate for the presidency, but was not chosen, that body preferring Alvarez for the office. Vidaurri now took up a semi-independent position, decreed the confiscation of the church property in the north-eastern states, and disbanded the armed force. It was long believed that he contemplated the secession of the states of New Leon, Tamaulipas, and Coahuila from the republic, which suspicion was strengthened by his refusal to recognize Comonfort as the successor of President Alvarez (Dec. 8, 1855); and in Feb. 1856, he decreed the union of Coahuila and New Leon, proclaiming himself their governor and commanding general. The congress at Mexico annulled the decree, and an armed conflict seemed inevitable. It was however avoided, and on Nov. 18, 1856, a treaty was made by which Vidaurri acknowledged the government of Comonfort and remained in control of the two combined states, which authority he still exercises. In the succeeding internal conflicts of Mexico he has taken no prominent part. In the summer of 1861 he entered into friendly relations with the secessionists of Texas; and on the invasion of Mexico by the allied French, Spanish, and English forces in 1861-'2, he declared his adhesion to the national cause.

VIDOCQ, Eugène François, a French adventurer, chief of the detective police in the prefecture of Paris, born in Arras, July 23, 1775, died in Paris, May 10, 1857. He was the son of a baker, and his athletic figure and robust constitution gave such power to the natural turbulence of his disposition, that at an early period he had gained an unenviable reputation by thrashing all his comrades and terrifying all the animals and children in the neighborhood. At 13 he was apprenticed to his father's business, and in this position was in the habit of replenishing his pockets by stealing money from the till; and for one of his exploits in carrying off some of the plate he was placed in a prison for 10 days. In consequence of a subsequent robbery to the extent of 2,000 francs he fled to Ostend, where the ingenuity of a benevolent-looking stranger relieved him of this money. Left penniless and ragged, he got employment in a merry-andrew show and itinerant menagerie, where he was obliged to perform the most menial and disgusting duties. On account of ill treatment he left this place for that of assistant to a street theatre; but an intrigue with the wife of the manager threw him again upon the world, and he returned to Arras, where he was pardoned by his parents. Soon afterward he joined the army, and became a member of a company of chasseurs in the Bourbon regiment, and in the space of 6 months had fought 15 duels and killed two men. He participated in the campaign of 1792, and was present at the battle fought against the Prussians by Kellermann on Oct. 30, when he was made corporal of grenadiers. A quarrel with the sergeant-major of the regiment he had left led to his arrest, and in consequence he deserted, fled to Vitry-le-Français, and joined the 11th chasseurs. He took part in the battle of Jemmapes, but his desertion having been discovered he fled to the Austrians, and gave lessons in fencing to the officers of the garrison of Louvain. He soon returned to the French army, and under protection of an amnesty rejoined the 11th chasseurs, and at one period, in consequence of an unjust suspicion of having been engaged in a robbery, fought 6 duels in 6 days. Subsequently, while serving on the banks of the Meuse, he received a severe wound, and returned on furlough to Arras, where he found the guillotine in active operation under the notorious Joseph Lebon. Here he plunged into numerous amours, and as the result of a quarrel with a rival was thrown into a prison, where he remained several days in constant expectation of death. Through the influence of the sister of Chevalier, a furious Jacobin terrorist, he was released, and employed to drill the 2d battalion of Pas-de-Calais, and was afterward made sub-lieutenant. Disabled for two months by a wound received in a skirmish with the Austrians, he entered after his recovery the 28th battalion of volunteers quartered at Fresnes, had two fingers broken by a musket ball in an effort to recover the goods taken from a destitute family by the Austrians, spent his furlough at Lille engaged in affairs of gallantry, and instead of rejoining his corps went to Arras, determined to quit the service. There, through the influence of Chevalier, he procured an extension of leave. The sister of the Jacobin, whom Vidocq describes as the most amorous and ugliest of brunettes, redoubled her kindness to him; and at last when only 18 years old he was married to her. The wife, however, was as fond of intrigue as the husband, and Vidocq, standing too much in her way, was soon ordered to rejoin his regiment at Tournay. Returning to Arras suddenly on business, he found an officer in his wife's apartments; the encounter led to his arrest, but he was soon discharged, returned to Tournay, and thence went to Brussels, where he frequented the gaming tables, and passed his time in idleness and dissipation. He was once arrested, and his papers being demanded, he supplied himself with a forged register of his birth, a passport, and a certificate of half pay in the name of Rousseau, and by the agency of some friends was given a line of route for a sub-lieutenant of the 6th chasseurs travelling with his horse and entitled to lodgings and rations. He thus became a member of that roving army of pretended officers who constantly imposed upon the commissaries of war in the Netherlands, and in this imaginary army rose to the rank of captain of hussars. In this position he was billeted at Brussels upon a rich baroness, a widow, who treated him with great kindness, and was disposed to marry him, he having been represented to her by his friends as an emigrant count, passing under an assumed name. The wedding was about to take place, when remorse or a fear of the consequences of bigamy induced him to confess the imposture to the baroness. As a mark of her gratitude she gave him a casket containing 15,000 francs in gold, with which he went to Amsterdam, and subsequently to Paris, where he arrived March 2, 1796. Here he soon lost nearly all his money, and resolved to return to Lille; and there, beginning again to be in want, he became an assistant of a doctor, who turned out to be one of a band of gypsy robbers. With him he went to Brussels, and finding there an old acquaintance accompanied him to Courtrai and to Lille. There he once found his mistress supping with a captain of engineers, by whom a charge was preferred against him, and he was sent to prison for three months. At the expiration of his sentence he found himself arraigned as an accomplice in the forgery of public documents. He made his escape, but was arrested and brought back, and a second escape and second arrest brought with it a charge of attempted assassination against his mistress, who had stabbed herself, though not fatally, in despair at his supposed inconstancy. A third time he made his escape, and joined a crew of smugglers, engaged in a fight with the revenue officers, left the business and returned to Lille, and was there again arrested, tried for the forgery, of which he declares himself entirely innocent, and sentenced to 8 years' imprisonment in the galleys. He made his escape from arrest after an imprisonment of 16 days, but after a series of adventures in various characters and under various names he was in April, 1799, resentenced to the galleys at Toulon. From here he also effected his escape, and after spending several years in a number of professions, and after several arrests and escapes, he took up his residence in Paris, where he endeavored to lead an honest life. In constant danger of apprehension by the police, and constantly beset by his former criminal associates, he finally went in 1809 to M. Henry, chief of the division of security in the prefecture of police, informed him of his situation, and declared that if his residence in the capital would be tolerated he would give him exact information in regard to many fugitive galley slaves and criminals. The offer was at first declined, and he was shortly afterward arrested and confined in the Bicêtre. In this situation he renewed his proposals, which were accepted. He was transferred to the prison of La Force, and from the great reputation he had acquired among the convicts he was enabled to gain a vast number of their secrets, which he communicated to the police. After a residence of 21 months in the Bicêtre and La Force he was permitted to escape, and then began his career as a secret agent, in which his success soon recommended him highly to the authorities. His great strength, his readiness of resource, and his skill in disguises, by which he was enabled to become a partner in some of the most desperate attempts, and even engage in plans for assassinating himself, soon made him the terror of the Parisian criminals. In 1812 the brigade of security was formed, of which Vidocq was made chief, and from that time ceased to be a secret agent. The brigade consisted at first of 4 persons beside himself, afterward 6, afterward 10, and finally 12. In 1817 with this small band he effected 772 arrests and 39 seizures of stolen property. In 1823 and 1824 the number was increased to 20 and to 28. In this position he rendered great service by his activity and courage in clearing Paris of the bands of robbers, counterfeiters, and criminals of various kinds by whom it was infested. In 1827 he was succeeded in his office by Coco-Lacour, and after his removal he built a paper manufactory at St. Maude, about two leagues from Paris. In 1828 he published an autobiography, under the title of *Mémoires* (4 vols. 18mo., Paris), which has been translated into English. In 1832 he formed at Paris an insurance office for the purpose of assisting persons who had been deprived of their property by theft or craft; but this brought him into collision with the police, and it was closed. In 1844, in consequence of the success attained by Eugène Sue's "Mysteries of Paris" and works of a similar character, he republished his memoirs under the title of *Les vrais mystères de Paris.* Visiting England, he exhibited himself at the rooms of the cosmorama in Regent street, London, along with the instruments used by French burglars, but reaped no profit from the speculation. Afterward he lived in Belgium.

VIEN, Joseph Marie, a French painter, born in Montpellier June 18, 1716, died in Paris March 27, 1809. His first success was his picture of "The Plague of the Israelites in the Time of David," which gained him the grand prize of the French academy in 1743, and a pension from the government to enable him to study at Rome, where he passed 6 years. In 1754 he was elected a member of the French academy, and in 1775 was decorated with the order of St. Michael, and appointed director of the French school of art at Rome. After his return to Paris in 1781 he became director and one of the rectors of the academy. Louis XVI. made him principal painter to the king in 1788. Under Napoleon I. he was a senator, count of the empire, and commander of the legion of honor. He was regarded as the first historical painter of his time, and the regenerator of painting in France. His veneration for the antique had a decided influence upon the works of his pupils David, Vincent, and others. Among his best paintings are "St. Denis Preaching to the Gauls," "The Sleeping Hermit," "St. Louis intrusting the Regency to Blanche of Castile," "Hector inciting Paris to arm for the Defence of Troy," "The Parting of Hector and Andromache," "Briseïs in the Tent of Achilles," "Cupid and Psyche," "The Resurrection of Lazarus," and "The Virgin attended by Angels."

VIENNA (Ger. *Wien;* anc. *Vindobona*), the capital of the Austrian empire and of the archduchy of Austria, and the see of an archbishop, situated in a fertile plain on the southernmost branch of the Danube, called the Danube canal, which here receives the small river Wien, or Wieden, and the Alster and Ottakringer creeks, in lat. 48° 12′ N., long. 16° 23′ E.; pop. in 1857, not including the garrison, 476,222. The great bulk of the population consists of German Roman Catholics, but all the nationalities and religious denominations of the empire are well represented; the number of Protestants is about 12,000, and of Jews nearly the same. Vienna is divided into the old city, which is nearly circular, about 3 m. in circumference, and the new city, consisting of 34 suburbs. The old city was down to 1858 surrounded by a deep fosse and high walls, with projecting bastions, which in later times served as terrace walks; but these fortifications have since been, in great part, filled up or levelled, thus enlarging the glacis, a broad and pleasant esplanade by which they were encircled and separated from the suburbs. Of the numerous gates which formerly led from the old city to the suburbs, the Burgthor (castle or palace gate) is justly celebrated. In the arrangement of its streets Vienna has been compared to a spider's web, the principal thoroughfares radiating from a central point, near the cathedral of St. Stephen, to the bastions, across the glacis, and through the suburbs to the outer lines, and being intersected by numerous minor streets and alleys. Contrary to the general rule in modern cities, the old part of the town is the more fashionable of the two. It has narrow streets mostly lined with lofty houses, but also some splendid squares, and contains the palaces of the emperor and the highest nobility, and the oldest churches. The Hofplatz (court square) has a colossal statue of the Virgin and two fountains; the Josephsplatz an equestrian statue of the emperor Joseph II. by Zauner, bearing the inscription: *Saluti publicæ vixit, non diu, sed totus;* the Franzensplatz (formerly Burgplatz, or palace square) a bronze statue of Francis II (I.) in the act of blessing his people, which is little admired; the place called Freiung, a beautiful fountain with 5 bronze figures by Schwanthaler, representing Austria and her 4 principal rivers, the Danube, Vistula, Elbe, and Po; and the Graben, near the centre of the city, among other ornaments, a column in honor of the Trinity. The Graben, and the Kohlmarkt, a street leading from it to the imperial palace, contain the finest shops; and the neighboring Herrengasse, Schenkenstrasse, and Wallnerstrasse the princely dwellings of the Liechtensteins, Esterházys, Schönborns, and other German, Hungarian, or Bohemian magnates. The imperial palace (*Kaiserlich-königliche Burg*) is an ancient, vast, but irregular structure, consisting of 3 quadrangular divisions or courts, of which the central one is the Burgplatz. The right or western wing, which is the oldest part, and contains the apartments of the imperial family, is called the Schweizerhof (Swiss court), the left or eastern, the Amalienhof. The imperial library, a handsome building on the Josephsplatz, adjoining the Burg, contains upward of 350,000 volumes, 20,000 MSS., and about 300,000 engravings, the last collection being one of the largest and finest of its kind in the world. Among the numerous and valuable curiosities of this vast institution, which dates from the reign of the emperor Frederic III. (IV.), are the *Tabula Peutingeriana*, a map, on parchment, of the Roman empire in the 4th century, copied in the 13th, and the MS. psalter, in gold letters, of Charlemagne. The musical collection contains several pieces composed by various emperors of the house of Hapsburg. In the Schweizerhof is the jewel office (*Schatzkammer*), containing, among other precious things, the German imperial regalia, which were used for several centuries at the coronation of the German emperors, alleged to have been taken from the tomb of Charlemagne; the holy relics, including the holy spear and nails of the cross, also formerly used at the imperial coronations; the Austrian regalia; the sabre of Tamerlane; the Florentine diamond, of 133 carats weight, worn by Charles the Bold in the battle of Granson, and sold by the finder for 5 florins; an emerald weighing 2,980 carats; and the splendid collection of chains, collars, and other ornaments belonging to the dresses of the various Austrian orders. East of the Amalienhof is the splendid palace of the archduke Albert, containing a rich cabinet of engravings and drawings, and a library. Among the drawings is Raphael's autograph sketch of the "Transfiguration." Between the Burg and the palace of the archduke is the Augustiner-Gang (corridor of the Augustines), which contains the imperial cabinet of antiquities, a collection of ancient and modern cameos, gems, vases, coins, medals, and other curiosities, some of which are unique in size or workmanship. The cabinet of minerals, in the same corridor, has perhaps no equal among similar cabinets in the world. Its principal feature is the unique collection of aërolites from all parts of the world, among which is one weighing 71 pounds, which fell to the earth in Croatia in 1751. The imperial cabinet of zoology and botany, on the Josephsplatz, is especially rich in the botanical, ornithological, and entozoic departments, the last having no rival in the world. Near it are the riding school and the Burg theatre. The imperial arsenal (*Zeughaus*), in the W. part of the old city, is a new range of buildings of vast dimensions, comprising barracks, manufactories of arms, a laboratory, a cannon foundery, boring works, and a splendid armory; it constantly employs from 5,000 to 6,000 workmen. The enormous chain which the Turks under Solyman the Magnificent threw across the Danube near Buda in 1529 is hung around the walls of the court. The elk skin coat worn by Gustavus Adolphus at the battle of Lützen, the armor of John Sobieski, who saved Vienna from the Turks, and the green standard of Mohammed IV. captured on that occasion, are among the historical curiosities in the arsenal. The town or civic arsenal (*Bürgerliches Zeughaus*) also possesses many pieces of armor interesting from their historical associations. But the most valuable collection of this kind in Europe belongs to the Ambras museum, so called from a castle in the Tyrol, where it was originally placed, now in the Lower Belvedere, the N. W. division of a suburban palace built by Prince Eugene, which is separated from the upper or S. E. division by a fine public garden. Of the 7 apartments of this museum, 3 are filled with ancient armor, among which are the armor of Scanderbeg, the tomahawk of Montezuma, the helmet and sabre of Zrinyi, the superb suit of Alexander Farnese, and the standard and quiver of Kara Mustapha, the besieger of Vienna. The other apartments embrace old paintings, curiosities of nature and art, carvings, trinkets, remarkable dresses, &c. In the Upper Belvedere is the imperial picture gallery, in Germany second only to that of Dresden. Among its vast treasures of art, works belonging to the Venetian, Roman, Florentine, Bolognese, Spanish, Dutch, Flemish, old German, and other schools, are paintings by Paul Veronese, Tintoretto, Giorgione, Titian, Raphael, Salvator Rosa, Fra Bartolomeo, the Carraccis, Guido Reni, Guercino, Correggio, Parmigiano, Mantegna, Murillo, Velasquez, Hoogstraten, Backhuysen, Vandyke, Rubens, Van Eyck, Teniers, Albert Dürer, Cranach, and Holbein. Adjoining the Lower Belvedere is the botanical garden. One of Prince Liechtenstein's suburban palaces has also a very valuable and rich collection of paintings. The residences of the Harrachs, Schönborns, Esterházys, Czernins, and others, have less remarkable collections of works of art.—The most conspicuous or interesting churches of Vienna are the cathedral of St. Stephen (*Stephanskirche*), the Capuchin church, the church of the Augustines, and the Maria-Stiegen-Kirche. The cathedral is considered by many to be the finest specimen of Gothic architecture on the globe. It was begun 5 centuries ago, but the 2 turrets, in the Byzantine style, flanking the W. portal, called the Giant gate, are remains of a church built 200 years earlier. The length of the cathedral is 345 feet, its breadth 230; its steeple (*Stephansthurm*), a masterpiece of architecture, begun in 1359, and completed in 1423, is 444 feet high. The largest bell, cast from hundreds of cannon taken from the besieging Turks in 1683, weighs 380 cwt. The view from the steeple extends over the Danube and the battle fields of the Marchfeld, Wagram, Aspern, Essling, Lobau, and Schwechat, to the N. E., E., and S. E.; over the palaces, gardens, bathing and other establishments of Maria Hitzing, Schönbrunn, Mödling, Baden, and Laxenburg, to the S. W. and S.; to the Kahlenberg on the W.; and over Klosterneuburg to the N. W. The Capuchin church contains the burial vault of the imperial family.—Among the numerous educational or charitable institutions of the Austrian capital are the university; the academy of fine arts, founded by Leopold I.; the polytechnic institute, established in 1816 by Francis; an academy of engineers; a conservatory of music; a veterinary school; the observatory, with a school of astronomy; a school for orientalists; the Josephinum medical institute, named after its founder, Joseph II.; the enormous general hospital (*das allgemeine Krankenhaus*), established by the same emperor, with its branch establishments, the ophthalmic hospital, the insane asylum, and the lying-in hospital, to which women may be admitted with perfect secrecy, their children, if required, being taken to the immense foundling house; the military hospital; the asylum of the blind; the deaf and dumb asylum, and the house of invalids, founded by Joseph II.; and the hospital of the brothers of charity. The university was founded in the 14th century, but reorganized under Maria Theresa. It has a library of upward of 130,000 volumes, the most celebrated medical faculty in Germany, more than 80 professors paid exclusively by the government, and from 2,000 to 3,000 students, the highest number in any German university. The government printing office (*Hof- und Staats-Druckerei*) is a vast establishment, employing nearly 1,000 workmen, in the ordinary processes of printing, as well as in type casting, color printing, stereotyping, &c. Among the principal theatres of Vienna are the Burg theatre, attached to the imperial palace, for the regular drama; the Carinthian gate theatre, for operas and ballets; the Wien or Wieden theatre, for melodramas; and the Karl theatre, the favorite of the people, for vaudevilles and farces. The dancing, ball, and concert rooms of Vienna, as well as other places of amusement, are very numerous, and well attended, the inhabitants being distinguished by a cheerful and jovial disposition above those of all other capitals of Europe. The coffee houses are spacious and generally thronged. The great promenades are the glacis, the Volksgarten (people's garden), the Augarten, the Brigittenau, and especially the Prater, a natural park on a series of low islands formed by arms of the Danube. It is divided into the Upper and Lower Prater, separated by the Prater avenue, the main approach to which from the inner city is through the Jägerzeile. The Prater, especially on fête days, with its coffee houses, panorama, circus, swings, jugglers, rustic kitchens, long rows of tables and benches, amphitheatres, trains of carriages, and its laughing, drinking, or dancing multitudes in all the various national costumes of the Austrian empire, is the most characteristic part of the capital. Omnibuses and railways carry excursionists to the various summer resorts of the picturesque environs, especially to Schönbrunn, Laxenburg, and Baden. Vienna is connected by railway with Prague, Brünn, Cracow, Pesth, Trieste, Venice, and other chief cities of the empire. Steamboats on the Danube connect it with Lintz, Pesth, Belgrade, and other towns of the Austrian and Turkish empires, for both of which it is a chief commercial emporium. Its manufactures are very considerable, including silks, velvets, shawls, woollens, cottons, ribbons, carpets, gold and silver lace, porcelain, paper, books, maps, and optical and musical instruments.—Vienna, under the name of Vindobona, was a station of the Roman legions in Upper Pannonia. It subsequently became a chief city of the Marchia Orientalis (east territory; Ger. *Oestreich*, Austria) of the Carlovingian empire, in the 12th century the capital of the Austrian margraviate, later of the Austrian archduchy, and under Ferdinand I. the imperial residence of the house of Hapsburg. Matthias Corvinus of Hungary captured it in 1485; Count Niklas von Salm heroically defended it against Sultan Solyman in 1529, and Stahremberg against the immense hosts of Mohammed IV., under Kara Mustapha, in 1683, when it was saved chiefly by John Sobieski; in 1805 and 1809 it was taken by the French. In March, 1848, its inhabitants by a sudden movement overthrew the rule of Metternich; another movement in May caused the retirement of the emperor Ferdinand for a short time to Innspruck, and an insurrection in October compelled him to flee to Olmütz. The city was subsequently besieged and taken by Windischgrätz, a Hungarian army which had crossed the frontier to relieve it being defeated at Schwechat (Oct. 30). Treaties concluded there in 1735 and 1738 regulated the affairs of Italy. The peace of Vienna was negotiated at the palace of Schönbrunn in 1809. The great congress which reorganized the political system of Europe after the fall of Napoleon was held there in 1814–'15, and a complementary act was agreed upon by a conference of German ministers in 1819–'20. Other conferences took place there in 1853–'5 in connecion with the warlike affairs in the East.

VIENNE, a W. department of France, formed chiefly from the old province of Poitou, bounded N. W. by the department of Maine-et-Loire, N. and N. E. by Indre-et-Loire, E. by Indre, S. E. by Haute-Vienne, S. by Charente, and W. by Deux-Sèvres; area, 2,574 sq. m.; pop. in 1862, 322,028. Capital, Poitiers. In the S. part the surface is diversified by low hills, but elsewhere it is level. The principal rivers are the Vienne, Charente, Dive, Clain, and Creuse. About ⅓ of the area is arable, ⅛ covered with forests, and the remainder waste. The vine is extensively cultivated, but the quality of the wine is inferior. Chestnuts form an important part of the food of the peasantry. Sand of a superior quality for making glass and imitation diamonds is procured from Vienne; and there are excellent quarries of lithographic stone, millstones, &c. Iron ore is abundant. Common lace, coarse woollen goods, iron ware, saddlery, firearms, cutlery, &c., are manufactured.

VIENNE (anc. *Vienna Allobrogum*), a town of France, department of Isère, situated on the left bank of the Rhône, at the mouth of the Gère, 49 m. W. N. W. from Grenoble; pop. in 1856, 18,458. It contains some interesting old churches and Roman antiquities. It was the capital of the first and second kingdoms of Burgundy. The 15th general council was held here in 1311.

VIENNE, Haute. See Haute-Vienne.

VIENNET, Jean Pons Guillaume, a French author and politician, born in Béziers, department of Hérault, Nov. 18, 1777. He was destined for the church, but in 1796 entered as lieutenant the marine artillery, in which, in consequence of his votes against the consulate for life and the empire, he had only risen to the rank of captain, when in 1813 he joined the land service. At the battle of Lützen he was decorated by the emperor's own hands, and at that of Leipsic was taken prisoner. Set at liberty after the restoration, he adhered to the new government, stood aloof during the Hundred Days, and afterward engaged in journalism and authorship. In 1823 he received from Gouvion St. Cyr an appointment in the royal staff corps, which he lost in 1827 by his poetical satire against the laws upon the press, entitled *Épître aux chiffonniers sur les crimes de la presse*. This, however, with other liberal writings, gained him great popularity, which was increased by his opposition to despotic measures in the chamber of deputies, to which he was elected by his native department in 1827. But he had early shown a monarchical tendency in his *Épître à l'empereur Alexandre* (1815) and other productions; and after the revolution of 1830, which he aided, he sustained the counter-revolutionary policy which was soon adopted by the government, assailed the liberty of the press, by which he had been accused of corruption, and after the outbreak of April, 1834, advocated the laws of repression. He was now the object of attack from all sides; as he himself says, epigrams were showered upon him at the rate of 500 a year, and "every youth escaped from college, who engaged in writing *feuilletons*, essayed his pen upon my old clothes, and believed himself to owe me his first kick." In 1840 Louis Philippe made him a peer, of which position the revolution of 1848 deprived him, and he has since taken no part in politics. He was one of the chiefs of the opposition to the new school in literature, and gained the enmity of the romanticists by his *Épître aux Muses sur les romantiques* (1824); his prominence in this literary warfare secured his admission to the French academy in 1830 as successor of the count de Ségur. Among his other works are several dramas, which have met with no success; poems entitled *L'Austerlitz* (1808), *Marengo*, *Parga*, printed for the benefit of the Pargiotes (1820), *La Philippide*, of which the hero is Philip Augustus (2 vols. 18mo., 1828), &c.; the romances *La tour de Montlhéry* (1833), and *Le château de Saint Ange* (1834); *Promenade philosophique au cimetière du Père Lachaise* (2d ed., 1855), containing in prose and verse biographical and satirical notices of 280 persons; and a collection of political fables, with an autobiographical preface. An edition of his epistles and satires published in 1860 contains a poem entitled "To my Eighty Years."

VIETA, or Viète, François, a French mathematician, born in Fontenay-le-Comte, near Rochelle, in 1540, died in Paris in Dec. 1600. Little is known of his life. On the resignation of his friend De Thou, he was made master of requests, and held office during the stormy reigns of Henry III. and Henry IV. He was once saved from imprisonment and death by the duchess de Rohan. For Henry IV. he deciphered the communications made by the Spaniards with one another, through a cipher composed of more than 500 characters signifying different things at different times. The Spaniards attributed his success to magic. Vieta attacked the reformed calendar of Gregory XIII., and had a controversy with Clavius which did not redound to his honor. He introduced into algebra the general use of letters of the alphabet to denote given quantities, which before his time had been used only on particular occasions, and also originated certain expressions, some of which are still employed.

VIEUXTEMPS, Henri, a Belgian violinist, born in Verviers, Feb. 20, 1820. The son of a tuner of instruments, he played the violin in public at the age of 8 years, was a pupil of Beriot for several months, studied composition under Reicha, appeared with success in Paris and Vienna in 1830, and spent several years in professional journeys through Europe, becoming a public favorite especially at St. Petersburg and Moscow. In 1843, and again in 1855, he visited America. His playing is distinguished by great energy and breadth, with remarkable elegance and correctness of execution. His compositions combine the qualities of classical and modern music.

VIGILIUS, a pope of Rome, born in Rome, died in Syracuse in 555. While yet a deacon he was designated by Pope Boniface II. (520–'32) at a synod held in Rome as his successor in the papal see; but at a subsequent synod this act was repealed as uncanonical. During the pontificates of Agapetus I. and Sylverius, Vigilius was *apocrisiarius* (an office nearly corresponding to the later one of papal nuncio) at Constantinople. He sided with the imperial government against Pope Sylverius, and was sent to Rome to procure the imprisonment and exile of Sylverius. This being accomplished, Vigilius was proclaimed pope in 537. Roman Catholic writers generally date his legitimate pontificate from the year 540, when Sylverius died; during the previous 3 years he was, in their eyes, an antipope. According to a promise given to the empress of Constantinople, Vigilius wrote in 538 a secret letter to the heads of the Monophysites, in which he approved of their views, and condemned the anti-Monophysite decisions of Pope Leo I.; but later (after 540) he refused to issue a decree in favor of the Monophysites, and declared that he would abide by the decisions of the 4 œcumenical councils and the decrees of Popes Agapetus and Leo. When the emperor Justinian in an edict (544) condemned the so called "three chapters" (the writings of Theodore of Mopsuestia, of Theodoret against Cyril, and the Epistle of Ibas), and the western bishops generally threatened to make a stern resistance to this condemnation, Vigilius was summoned to Constantinople (546) and prevailed upon to condemn likewise the three chapters, in a document called *Judicatum* (548). Seeing, however, the western bishops persist in their decided opposition, Vigilius refused to adopt the emperor's second edict against the three chapters. He also refused to attend the 5th œcumenical council of Constantinople, which Justinian convoked in 553, and defined his relation to the three chapters in another document, called *Constitutum*, in which he forbade the taking of any further measures in the controversy. The council nevertheless solemnly condemned again the three chapters, and Vigilius was exiled (553). In 554 he assented to the decrees of the council, and was permitted to return to Rome, but died on the way.

VIGNOLA. See Barozzio da Vignola.

VIGNY, Alfred Victor, count de, a French poet, born at the chateau of Loches, March 27, 1799. After receiving his education in Paris, he entered the military service in 1814, but resigned in 1828, and since that period has lived in Paris. A collection of his poems, which had originally been published in periodicals, appeared in 1828 under the title of *Poëmes antiques et modernes.* In 1826 his first historical romance, *Cinq Mars* (2 vols.), was published, and gained great success; it was followed in 1832 by *Stello, ou les diables bleus*, and in 1835 by *Servitude et grandeurs militaires.* In 1829 he translated Shakespeare's "Othello;" in 1831 appeared his drama of *La maréchale d'Ancre*, and in 1835 that of *Chatterton*, and a collection of his works in 8 vols. in 1838. In 1843 he published additional poems under the title of *Poëmes philosophiques*, and in 1856 *Consultations du docteur noir.* He is an officer of the legion of honor, and has been since 1845 a member of the academy. He is considered one of the best poets of the modern romantic school of France.

VIGO, a W. co. of Indiana, bordering on Illinois, and drained by the Wabash river; area, 400 sq. m.; pop. in 1860, 22,519. The surface is level or undulating and diversified with forests and prairies, and the soil is very fertile. The productions in 1850 were 996,481 bushels of Indian corn, 58,598 of wheat, 90,826 of oats, and 3,978 tons of hay. There were 32 churches, 6 newspaper offices, and 1,259 pupils attending public schools. Bituminous coal, limestone, and freestone abound. The county is intersected by the Wabash and Erie canal, the Terre Haute and Richmond, Terre Haute, Alton, and St. Louis, and Evansville and Terre Haute railroads. Capital, Terre Haute.

VIKINGR, or Vikings, piratical chieftains of the Scandinavian race, usually the younger sons of the Danish or Norwegian kings or *jarls*, who, lacking employment at home, gathered companies of their seafaring countrymen, and made forays upon the coasts of the British isles and France, and sometimes extended their voyages still further southward and westward. These piratical expeditions were very frequent from the 6th to the 8th century, and continued down to the 11th. (See Denmark, Northmen, and Norway.)

VILLAFRANCA, a town of Austrian Italy, on the left bank of the Tartaro, 9 m. S. W. from Verona. After the battle of Solferino a meeting took place here between the emperors of France and Austria, July 11, 1859, at which an armistice was concluded, and the preliminaries of a treaty of peace, afterward ratified at Zürich, were agreed upon. (See Italy.)

VILLANI. I. Giovanni, an Italian historian, born in Florence toward the end of the 13th century, died in 1348. In 1300 he was present at the jubilee in Rome, and was there induced to write a history of Florence from its origin until his own time, which he finished in 12 books. He seems to have been a merchant by profession, but filled various offices in the republic; in 1317 he was engaged in negotiating a peace between his native city and Lucca and Pisa, afterward served in the war against Castruccio Castracani, and in 1328 negotiated the peace with Lucca. In 1345 the bankruptcy of the Bardi occasioned him so great a loss that he was imprisoned as an insolvent. He died of the plague. In politics he belonged to the Guelph party. His work, though containing errors, especially in the early part of the narrative, is very accurate and valuable when the author comes to treat of his own times. The style is simple and clear, and the language is the pure Florentine of the age; and Baccio Valori's edition of the history, published in 1587, was regarded by the academy della Crusca as an authority on the subject of language. The first 10 books were printed at Venice in 1537, and the 2 remaining at Florence in 1554. II. Matteo, a Florentine historian, brother of the preceding, continued the history from 1348 to 1364, the year in which he also died of the plague. The style is inferior to that of Giovanni, but the work is very accurate. III. Filippo, son of the preceding (died about 1404), wrote *De Origine Civitatis Florentinæ et ejusdem Civibus.* The first part of this work is full of fables, and has never been published; the second part, comprising lives of illustrious Florentines, was published in 1747 by Mazzucchelli, who found an old Italian version of the Latin original. He also wrote a work *De Origine Regum Francorum*, and continued the history of his father.—The most correct edition of the Villani chronicles is that of Moutier (14 vols., Florence, 1823-'6).

VILLANUEVA, Joaquin Lorenzo de, a Spanish author and patriot, born in Jativa, Valencia, Aug. 10, 1757, died in Dublin, March 26, 1837. He was educated at the university of Valencia, and after having been admitted to the priesthood fixed his residence in Madrid, where he was appointed court preacher and confessor of the royal chapel. While at the capital he published his *Año Cristiano de España* (19 vols.), in which he gave accounts of the lives of the saints and martyrs of the Spanish church, and a description of its festivals. In his treatise *De la leccion de la Sagrada Escritura en lenguas vulgares* (Valencia, 1791), he advocated the reading of the Scriptures in the vernacular. He also took the ground that the inquisition exercised a jurisdiction which was incompatible with the laws of Spain. When the revolution of 1808 broke out, he declared for the liberal party, and in 1810 was elected from Valencia a deputy to the extraordinary cortes. In 1812 he published *Angelicas fuentes ó el Tomista en las cortes*, a defence of constitutionalism based upon the philosophy of Thomas Aquinas. He was elected an alternate to the cortes of 1813, but after the return of Ferdinand VII. in 1814 was confined in the monastery of Salceda. In 1820 the restoration of the constitutional government set him at liberty, and he was again elected a deputy, and was sent by the ministry on a mission to Rome to settle with the pope the rights of the Spanish church. In this he met with no success, and in 1823, after the overthrow of the constitutional government, he took up his residence in Ireland. Here he wrote *Vida literaria de J. L. de Villanueva* (2 vols. 8vo., 1825), and a Latin dissertation on Irish antiquities and the Phœnician colonization of Ireland entitled *Ibernia Phœnicea, seu Phœnicum in Ibernia incolatus* (Dublin, 1831). In 1833 a volume of his poems appeared at London.—His brother Jaime (born in Jativa in 1765, died in London, Nov. 14, 1824) was first a Dominican, then became a secular priest, and shared in the exile of his brother. He wrote a *Viage literario á las iglesias de España* (10 vols., Madrid, 1803–'21), to the first 5 volumes of which his brother contributed many notes and illustrations.

VILLARS, Charles Louis Hector, duke of, a French soldier, born in Moulins, Bourbonnais, May 8, 1653, died in Turin, June 17, 1734. He early entered the army, was with Condé at the crossing of the Rhine in 1672, was wounded at the battle of Senef (1674) and promoted to a colonelcy, and served under Luxembourg in Flanders and under Créqui in Alsace. After the peace of Nimeguen (1678) he shone at court among the most brilliant of the courtiers, and was disgraced for a while on account of some love affairs, but in 1683 went as ambassador to Vienna, where he displayed great diplomatic talents. On the breaking out of the war against the league of Augsburg in 1689, he was placed in command of the cavalry in the army under Marshal d'Humières, and by his services won successively the ranks of major-general and lieutenant-general. In 1699 he was sent again to Vienna, and returned to participate in the war of the Spanish succession. He first served in Italy under Villeroy in 1701, and then was placed in command of the French army on the Rhine. Crossing that river at Hüningen in 1702, he gained a brilliant victory at Friedlingen over the prince of Baden, and was hailed with the title of marshal of France on the battle field by his admiring soldiers. This rank was afterward conferred upon him by Louis XIV. The following year, in concert with the elector of Bavaria, he was equally successful at Hochstedt, and thus opened the road to Vienna; but, displeased at the dilatory movements of his associate, he solicited his recall. He was then (1704) placed at the head of an army employed against the Camisards in the Cévennes, whom he reduced to submission in less than a year. After the disastrous defeat of Tallard and Marsin at Blenheim, he was called to protect the eastern frontier of France; and although his army was inferior in numbers to the combined imperialists and English, he stopped the progress of Marlborough. During the following years, while the French armies were worsted in Flanders and Italy, he not only kept his ground, but defeated the imperialists in their formidable lines at Stollhofen, near Strasbourg (1707), and penetrated into Germany. Repairing in 1708 to Dauphiné, which was invaded by the duke of Savoy, he forced the duke to retreat by his operations against Piedmont. In 1709 he succeeded Vendôme in the command of the army in Flanders, and gave battle to Marlborough and Prince Eugene at Malplaquet. After a fierce struggle, in which he was severely wounded and carried off the field, the French, who had inflicted a great loss on the allies, were compelled to fall back; but this defeat was almost as glorious to Villars as a victory would have been. He was made a peer of France, and the king gave him apartments at Versailles, so that he could be taken care of under his own supervision. Before he had completely recovered he rejoined his army, and won in 1712 the celebrated battle of Denain, which saved France, and greatly contributed to the peace of Utrecht, March 31, 1713. Austria not agreeing to this treaty, he pushed on the war on the Rhine against Prince Eugene, took Spire, Landau, and Freiburg, and finally negotiated with his opponent the peace of Rastadt, March 6, 1714. Being appointed governor of Provence, he completed several improvements, including a canal which bears his name. After the death of Louis XIV. he was one of the council of regency, opposed the policy which brought about an alliance between France and England, disapproved of the financial system of Law, and proved one of the wisest advisers of the regent. When the war for the succession of Poland broke out (1733) he received from the king the title of "marshal-general of the camps and armies of France," which had never before been conferred except upon Turenne, went to Italy, and rapidly conquered the duchies of Milan and Mantua. This was his last campaign; dissatisfied with the conduct of the king of Sardinia, in whose interest France was fighting, he resigned his command, and repaired to Turin, where he died after a short illness. He left an autobiography, which has been published by Anquetil (4 vols. 12mo., 1784). His *Mémoires* (3 vols. 12mo.) were published in Holland; but the first volume only, according to Voltaire, is from his own hand.—His son, Honoré Armand, who succeeded to his offices and dignities, was a man of ordinary parts, and would be entirely ignored if he had not been the friend and patron of Voltaire.

VILLARS, Dominique, a French botanist, born near Gap, Dauphiné, Nov. 14, 1745, died in Strasbourg, June 27, 1814. He was the son of a farmer, and having early evinced a taste for botany and medicine, was enabled, by a pension which he received through the patronage of the intendant of Dauphiné, to devote himself to his favorite pursuit. He lectured on botany at Grenoble in 1773, travelled over the whole of his native province to study its flora, and in 1781 was appointed physician in the military hospital at Grenoble. On the establishment of the central schools by the convention, he was appointed to a professorship in that of Grenoble, and was an original member of the French institute. In 1805 he was called to the chair of botany and medicine in the academy at Strasbourg, where two years later he held the office of dean. Among his works are: *Histoire naturelle des plantes du Dauphiné* (4 vols., Grenoble, 1786); *Mémoires sur la topographie et l'histoire naturelle* (Lyons, 1804); and *Précis d'un voyage botanique fait en Suisse, dans les Grisons*, &c. (Paris, 1812).

VILLEGAS, Estevan Manuel de, a Spanish poet, born in Najera, Old Castile, in 1596, died in 1669. He was a lawyer by profession, but during his whole life remained unfortunate and poor. Much of his poetry was written while he was only 14, and nearly all of it was published before he was 21, when it appeared under the title of *Amatorias* (Najera, 1617). His works are chiefly lyrical. He published in 1665 a translation in excellent Spanish prose of Boëthius, and began several other works, which were not printed during his lifetime. Villegas is considered the Anacreon of Spain.

VILLEHARDOUIN, Geoffroy de, a French historian, born near Arcis-sur-Aube about 1167, died in Thessaly in 1213. He belonged to a distinguished family of Champagne, and was *maréchal* of that county when in 1201 Thibault, count of Champagne and Brie, sent him to Venice to secure the assistance of the republic in fitting out a crusade. He succeeded in his mission, and accompanied the expedition when it started for the Holy Land under the leadership of the marquis of Montferrat, Thibault having meanwhile died. The crusaders stopped at Constantinople to reinstate the emperor Isaac Angelus on his throne; but being afterward dissatisfied with the treatment they received from him and his son Alexis, they captured the city in 1204 and gave the crown to Baldwin. Villehardouin wrote a graphic and minute description of the siege, and was afterward appointed by Baldwin *maréchal* of Roumania, while from the next emperor, Henry, he received a free gift of the entire city of Messinopolis in Thessaly with all its dependencies. He settled on his grant, and for nearly two centuries his descendants ruled over some of the most important parts of Greece. He was equally distinguished as a soldier and a writer. His "History of the Taking of Constantinople by the French and Venetians" is remarkable for its brevity and clearness, and is probably the oldest history in French prose. It was first published at Venice in 1573, and is included in the *Recueil des historiens des Gaules et de la France* (fol., Paris, 1822).

VILLEIN. See Serf.

VILLÈLE, Joseph, count de, a French statesman, born in Toulouse in 1773, died there, March 13, 1854. He early entered the navy, accompanied to the Isle of Bourbon a relative who had been appointed governor of that colony, resigned his commission in 1793, became clerk to a wealthy planter, whose daughter he married, and afterward a member of the colonial council. In 1803 he returned to his native city with a large fortune. A royalist at heart, he hailed with delight the restoration of the Bourbons, and in 1815 was nominated mayor of Toulouse, which post he held for several years, and at the same time was representative of the department of Haute-Garonne in the chamber of deputies. He was also a member of the next legislature, and the recognized leader of the ultra royalists. On the fall of the Decazes ministry, after the assassination of the duke of Berry (1820), he was appointed minister of state, and in the following year minister of finance, receiving soon afterward the premiership and the title of count. He held power for 7 years, during which he won a reputation for shrewdness and integrity, but he proved incapable of controlling his own party. He opposed the Spanish war, which was mostly devised by Châteaubriand, but had to yield to the majority of the cabinet. Having established public credit upon a firm basis, he introduced a bill to convert the 5 per cent. stocks into 3 per cents.; but the measure was defeated by the votes of many of his own party. He was more successful with his bill granting an indemnity of 1,000,000,000 francs to the emigrants who had lost their landed property during the revolution (1825). About the same time he concluded a convention with the republic of Hayti, recognizing its independence on condition that 150,000,000 francs should be paid to the planters who had been ruined and expelled from the island by the negro rebellion. The home policy of the government, however, to which he was generally opposed, rendered the cabinet more and more unpopular. The expulsion of Manuel from the chamber of deputies, March 3, 1823; the invasion of Spain; the introduction of a bill for reëstablishing the right of primogeniture, and of another, known as *loi d'amour*, for restricting the freedom of the press; the disbanding of the national guards, April 30, 1827; and the severity with which the Parisians were treated on account of some slight disturbances during the elections, gave so strong a majority to the opposition, that Villèle and his colleagues were obliged to resign, Jan. 4, 1828. Villèle at the same time was raised to the peerage. After the revolution of 1830 he retired to private life, and spent his latter years in comparative obscurity.—See D'Audiffret, *Notice historique sur M. le comte de Villèle* (Paris, 1855).

VILLEMAIN, Abel François, a French author, born in Paris, June 11, 1791. He was educated at the imperial lyceum, now college of Louis le Grand, and at the age of 19 appointed assistant professor of rhetoric in the Charlemagne college, and soon after instructor in French literature at the normal school. In 1812 his eulogy on Montaigne won the prize at the French academy. Having been appointed assistant professor of modern history in the faculty of letters, he began a course of lectures early in 1814, with a historical view of Europe at the beginning of the 15th century. In the same year he received another prize from the French academy for his essay *Sur les avantages et les inconvénients de la critique*, which he was invited to read at a solemn meeting of the academy held in the presence of Alexander I. of Russia and the king of Prussia, April 21, 1814. Two years later he received his third prize for his eulogy on Montesquieu, and was promoted to the chair of eloquence, in which he displayed his remarkable powers as an extemporaneous lecturer. In 1819 appeared his *Histoire de Cromwell*, and in 1821 he was elected to the French academy. In 1822 he published an elegant French translation of Cicero's "Republic," from a palimpsest discovered in 1820 by Cardinal Mai; in 1823 a volume of *Discours et mélanges littéraires;* and in 1825 a historical novel, *Lascaris, ou les Grecs du* 15^e *siècle*, and his *Essai sur l'état des Grecs depuis la conquête Musulmane.* Under the Decazes ministry he had been appointed master of requests in the council of state; but the policy of the government being altered by the Villèle cabinet, his sympathies were diverted to the opposition. On the presentation of the bill for establishing the censorship of the press, he protested against it in his official capacity; and in conjunction with Châteaubriand and Lacretelle, he was placed on a committee to prepare, in the name of the French academy, a remonstrance against the bill. This caused him to be deprived of his post in the council of state, but increased his popularity. His lectures in 1828–'9 were attended by crowds of hearers of every age and every profession, Châteaubriand and the duke de Chartres among the number. In 1830 he was returned by the opposition to the chamber of deputies, where he took an active part in all the proceedings that brought about the revolution of July and the elevation of the duke of Orleans to the throne. Appointed one of the council of public instruction in 1831, and vice-president of that body in 1832, he lost his seat in the chamber, but was indemnified by his promotion to a peerage, May 5, 1833, and continued a faithful supporter of a liberal policy. He became minister of public instruction in the Soult cabinet in 1839, resigned in 1840 with his colleagues, but at the end of a few months resumed the same post under the premiership of M. Guizot, and held it for nearly 4 years, till, having incurred the displeasure of Louis Philippe by his liberal views, he was dismissed in 1844. Resuming his literary pursuits, but not his lectures, he has since then occasionally taken part in the political discussions in the chamber of peers. He refused to take the oath to the emperor Napoleon III. in 1852. He has devoted his leisure hours to revising his former works, especially his *Tableau de la littérature au moyen âge* (2 vols. 12mo.) and *Tableau de la littérature Française au* 18^e *siècle* (4 vols. 12mo.), and publishing his *Souvenirs contemporains d'histoire et de littérature* (2 vols. 8vo. and 12mo., 1853–'8), and *Châteaubriand, sa vie et ses œuvres* (1859).

VILLENEUVE, Pierre Charles Jean Baptiste Sylvestre, a French naval officer, born in Valensolle, Provence, in 1763, committed suicide in Rennes, Feb. 22, 1806. He entered the navy when scarcely 15 years old, became captain in 1793, and was in command of a French division in the disastrous battle of Aboukir in 1798, after which he succeeded in reaching Malta with a portion of his fleet. Promoted to the rank of vice-admiral in 1804, he was charged with a conspicuous part in Napoleon's contemplated invasion of England; but his energy was not equal to the task that had devolved upon him. He indeed succeeded at first in decoying Nelson to the Caribbean sea and avoiding his pursuit, and sailed again for Europe, according to instructions; but instead of steering unhesitatingly toward the channel, which he was ordered to keep clear from enemies for a while, he stopped on his way off Galicia to engage the English admiral Calder, and, dispirited by an indecisive battle, fell back to Cadiz, while his enraged master at Boulogne was vainly waiting for his arrival. Nelson having appeared off Trafalgar, battle was joined between the combined French and Spanish fleets and the English admiral, and Villeneuve was totally defeated, Oct. 21, 1805, and made prisoner. After 6 months' captivity he was released, sailed for home, landed at Morlaix, and proceeded as far as Rennes, where, having reason to fear the displeasure of Napoleon, he stabbed himself to the heart.

VILLERS, Charles François Dominique de, a French historical and philosophical writer, born in Boulay, Lorraine, in 1767, died in Göttingen in 1815. He was an artillery officer when the revolution broke out, against which he wrote several pamphlets. Deeming it prudent to emigrate in 1792, he removed to Lübeck, where he married, became acquainted with several German authors, and, like Mme. de Staël, whom he met in one of her excursions, resolved to devote his pen to the introduction of German literature and philosophy into France. When the kingdom of Westphalia was established in 1807, he was appointed professor of literature in the university of Göttingen, but he lost his chair in 1814. His most important works are his *Philosophie de Kant, ou principes fondamentaux de la philosophie transcendentale* (Metz, 1801), and *Essai sur l'esprit et l'influence de la réformation de Luther* (1804).

VILLIERS. See Buckingham.

VILLOISON, Jean Baptiste Gaspard d'Ansse de, a French Hellenist, born at Corbeil-sur-Seine, March 5, 1750, died April 26, 1805. At the age of 15 he had read nearly all the Greek authors, and at 22 published from a MS. Apollonius's lexicon of the Iliad and Odyssey, together with the fragments of Philemon (2 vols. fol., Paris, 1773), for which he was elected a member of the academy of inscriptions. In 1778 he was sent by the government to Venice to search the library of St. Mark for unpublished Greek MSS., and in 1781 published in his *Anecdota Græca* (2 vols. 4to., Venice) several grammatical and rhetorical works and fragments which he found there. A far more valuable result of his mission, however, was the discovery of a MS. Iliad of the 10th century with very ancient scholia (now known as the *scholia Veneta*), which he printed with learned prolegomena in 1788. Subsequent explorations in the library of Weimar led to his *Epistolæ Vimarienses* (4to., Zürich, 1783), and in 1784 he edited at Strasbourg a Greek translation of various books of the Old Testament made by a Jew of the 9th century. He travelled about 3 years in the Levant, Greece, and the archipelago, in a fruitless search for inedited MSS., and on his return to France retired to Orleans until the revolution had passed, when having lost his property he began a course of lectures on Greek at Paris, in which he met with little encouragement. Just before his death he was appointed by Napoleon professor of ancient and modern Greek in the college of France. He left in MS. unfinished a descriptive work on ancient and modern Greece.

VIMEIRA, a town of Portugal, province of Estremadura, 7 m. N. from Torres Vedras, near the coast; pop. 1,800. On Aug. 21, 1808, the French, having made an attack from Torres Vedras upon the army commanded by Sir Arthur Wellesley, who had occupied this place for the purpose of covering the landing of reënforcements, were defeated with considerable loss. The result of the battle was the convention of Cintra.

VINAGO. See Pigeon, vol. xiii. p. 319.

VINCE, Samuel, an English mathematician, born at Fressingfield, Suffolk, died in Dec. 1821. He was of poor parents, but was educated at Caius college, Cambridge, and in 1796 was made Plumian professor of astronomy and experimental philosophy in that university. He took orders, and was presented in succession to the rectory of Kirkby Bedon, Norfolk, the vicarage of South Creak, Norfolk, and the archdeaconry of Bedford. His principal work is a "Complete System of Astronomy" (3 vols. 4to., Cambridge, 1797-1808). In conjunction with the Rev. James Wood he published a course of mathematics, to which he contributed "Elements of Conic Sections," "Principles of Fluxions," "Principles of Hydrostatics," and "Elements of Astronomy." He likewise published, in reply to Hume, an "Essay on Miracles," a pamphlet entitled "The Credibility of Christianity Vindicated," and in 1806 "Observations on the Hypotheses which have been assumed to account for the Cause of Gravitation on Mechanical Principles." He contributed several papers to the "Transactions" of the royal society, of which he became a member in 1786.

VINCENNES, a city and the capital of Knox co., Ind., situated on the left bank of the Wabash river, which is here navigable by steamboats, and on the Ohio and Mississippi and Evansville and Crawfordsville railroads, 110 m. S. W. from Indianapolis; pop. in 1860, 5,000. It is the seat of a university well endowed with public lands, of a Catholic bishopric and a Catholic theological seminary, and has a large cathedral and 8 other churches. The city has also a high school and numerous other schools, and in the immediate vicinity there are an academy for young ladies and male and female orphan asylums under the charge of the sisters of providence. There are 2 semi-weekly and 3 weekly newspapers, a bank, and manufactories of flour, casks and barrels, shingles, sash, blinds, and doors, cabinet ware, agricultural implements, &c.—Vincennes is the oldest town in the state. A French trading post was established on its site about 1710 under Capt. Morgan de Vinsenne, and a colony of French emigrants settled here in 1735, who maintained friendly intercourse with the Indians, and were for a long period the only white inhabitants of the Wabash valley. It was the capital of the territory till 1813.

VINCENNES, a town of France, department of Seine, 4 m. E. from the Barrière-du-Trône, Paris; pop. in 1852, 8,451. It has a celebrated castle, begun by Philip Augustus, which was a royal residence up to the time of Louis XIV. Louis XI. converted the keep into a state prison, in which the duke of Beaufort, the princes of Condé and Conti, Diderot, Mirabeau, and other illustrious persons were at different times confined. The duke d'Enghien was shot in the ditch of the castle, March 21, 1804. It stands in the midst of a wood or park, which is a favorite resort of pleasure seekers from Paris. The castle is now used as an artillery school and depot for the garrison of Paris, and is strongly fortified.

VINCENT, Alexandre Joseph Hidulphe, a French mathematician, born in Hesdin, Nov. 20, 1797. He studied at the colleges of Douai and Amiens, and at the normal school, and subsequently had charge of the classes in natural history, chemistry, and natural philosophy in the royal college of Rheims, to which he afterward added a professorship of mathematics. His principal mathematical works are a *Cours de géométrie élémentaire* (1826), many editions of which have appeared; *Recherches sur les fonctions exponentielles et logarithmiques* (1832); *Mémoire sur la résolution des équations numériques* (1834-'5); and *Théorie du parallélogramme de Watt et de la courbe à longue inflexion* (1837). He has written a great deal upon the theory and history of music, and upon miscellaneous subjects. He removed to Paris in 1826, and, after teaching successively in the Rollin and Bourbon colleges, accepted in 1831 a professorship of mathematics in the Louis le Grand college. He is a member of the institute of France, and "keeper of the collection of memoirs of learned societies."

VINCENT, Earl Saint. See Jervis.

VINCENT, William, D.D., an English classical scholar, born in the city of London, Nov. 3, 1739, died in Westminster, Dec. 21, 1815. He was educated at Westminster school, and at Trinity college, Cambridge, became an usher in the former in 1762, and rose to the office of head master in 1788, which he resigned when, after receiving various other ecclesiastical preferments, he was in 1802 made dean of Westminster by Mr. Addington, chancellor of the exchequer, in reward for his "Defence of Public Education, in a Letter to the Lord Bishop of Meath" (8vo., 1802). He published several pamphlets and sermons, some of them of a strongly conservative political cast, and tracts on classical subjects, and contributed largely to the "Classical Journal" and the "British Critic." But his chief work is "The History of the Commerce and Navigation of the Ancients in the Indian Ocean" (2 vols. 4to., 1807), comprising "The Voyage of Nearchus to the Euphrates, collected from the Original Journal preserved by Arrian," first published in 1797, and "The Periplus of the Erythræan Sea," in 1800 and 1805. A third volume was afterward added, containing the Greek text of the two voyages, with a translation, and part of Arrian's Indian history.

VINCENT DE PAUL. See Paul, Vincent de.

VINCHON, Auguste Jean Baptiste, a French painter, born in Paris, Aug. 5, 1789, died at Ems, in Nassau, in 1855. He studied at the school of fine arts, and took the second prize for a painting in 1813, and the grand prize in 1814. He subsequently visited Italy, where he devoted his attention chiefly to fresco painting, and executed several important works, including his "Ajax defying the Gods." After his return to France in 1818, he was employed to decorate the chapel of St. Maurice in the church of St. Sulpice in Paris. Among his best works are: "Episode of the Plague of Barcelona," at the lazaretto of Marseilles; "The Death of Coriolanus," "Joan of Arc under the Walls of Orleans," and others, at Versailles; "Boissy d'Anglas," in the chamber of peers, his sketch for which was preferred to that of M. Delacroix; "The Death of Henrietta of England;" and "The Martyrs under the Emperor Diocletian."

VINCI, Leonardo da, an Italian painter, born at Vinci, near Florence, in 1452, died at Cloux, near Amboise, France, May 2, 1519. He was the natural son of Pietro da Vinci, an advocate of Florence, and in early childhood displayed a remarkable aptitude for mathematics, music, and the art of design in all its branches. His father, struck by the talent which some of his drawings evinced, placed him with Andrea Verrocchio, celebrated as a painter, sculptor, and chaser in metal; and the pupil soon proved himself so superior to his master that the latter relinquished painting in despair, "enraged," says Vasari, "that a child should thus excel him." The first original picture by him of which mention is made was that called the *Rotello del fico*, a round section of a fig tree, on which was painted a hideous head, composed from studies of a variety of loathsome reptiles and insects, and the effect of which was to arouse feelings of disgust and horror in the beholder. It came into the possession of the duke of Milan, and in the troubles which subsequently distracted that city was lost or destroyed. While studying painting, Leonardo found time to cultivate many other arts and sciences, among which may be mentioned sculpture, architecture, engineering, mathematics, astronomy, anatomy, chemistry, several branches of natural history, and mechanics generally. He was also a poet of some pretensions, and one of the most accomplished composers and musicians of his time. Astonishing as were the range and diversity of his studies, he was no mere dabbler in science, but a profound and original thinker, "ardent and versatile as youth, patient and persevering as age," and became a master of whatever branch of knowledge he attempted. The fact that his fame nevertheless rests almost exclusively upon his productions as a painter can be explained only by the preeminence enjoyed by art during the period in which he flourished. At 30 years of age he was distinguished rather by the excellence than by the number of his designs, among which were cartoons of Adam and Eve, and of Neptune in his car drawn by sea horses, and the famous Medusa's head now in the Florentine gallery. His industry, however, was indefatigable, and numerous sketches and studies still in existence attest the fidelity and patience with which he studied the varying expressions of the human countenance. In 1483 he offered his services to Ludovico Sforza il Moro, then regent, afterward duke of Milan, in a letter still preserved in the Ambrosian library of that city, in which, after enumerating his qualifications as an engineer, both civil and military, a mechanician, and an architect, he adds: "I will also undertake any work in sculpture, in marble, in bronze, or in terra cotta; likewise in painting I can do what can be done as well as any man, be he who he may." He was forthwith taken into the service of Ludovico at a salary of 500 scudi, and during the next 17 years lived chiefly in Milan, engaged in many important works for his patron, not the least of which was the canal of the Martesana, a triumph of engineering skill and a source of great wealth to the city. In sculpture his chief undertaking was the colossal equestrian statue of Francesco Sforza, father of Ludovico, of which he completed a model in clay. It was never cast, Ludovico being too much crippled in his resources to furnish the metal, and at the capture of Milan by the French in 1499 was wantonly destroyed by some Gascon archers. Far superior to this, however, was his famous "Last Supper," painted in 1497-'9 on the wall of the refectory of the Dominican convent of Sta. Maria delle Grazie, and which has been called the highest effort of

Christian art. The dampness of the apartment, the imperfect vehicles used by Leonardo, and the vandalism of the monks, as well as of the French soldiery during the occupation of the city by Bonaparte in 1796, have contributed to the destruction of this remarkable work, of which nothing but the composition now remains. It has been twice painted over by indifferent artists, but fortunately several excellent copies of the original were made by pupils of Leonardo during his lifetime, including one by Marco da Oggione in the collection of the royal academy of England. Eleven others are in existence, and the work is widely known by the engravings of Morghen, Frey, and others. Beside executing a "Nativity" and other pictures, and founding a celebrated school of painting in Milan, he gave much time to the study of anatomy and the natural sciences, leaving numerous treatises, drawings, and designs as evidences of his industry. The capture of Milan by Louis XII. of France in 1499, and the flight of Ludovico, induced Leonardo to return in the following year to Florence, where he was favorably received by Pietro Soderini, the gonfaloniere of the city, and appointed a painter in the service of the republic. Here he was brought into rivalry with Michel Angelo, then 26 years of age and rapidly rising into eminence; and the sensitiveness and fastidiousness of the one, together with the haughty bearing of the other, prevented any friendly intercourse between them, however conscious each might be of the merits of the other. The two artists competed for the honor of painting in fresco one side of the council hall in the Palazzo Vecchio; and the cartoon of Leonardo, called the "Battle of the Standard," and representing an episode in the wars of the Florentines with the Milanese, received the preference. Political changes prevented the execution of the work, but Leonardo's cartoon and that of his rival, which represented a party of Florentine soldiers surprised while bathing in the Arno by the approach of the enemy, remained for several years the admiration of all Italy. Among other works produced during this period was the cartoon of Sta. Anna for the convent of the Nunziata in Florence, which excited an extraordinary sensation, but was never executed in colors, and the portrait of Mona Lisa del Giocondo, now in the Louvre, for which Francis I. gave 4,000 gold crowns. Leonardo remained in Florence, making occasional visits to Milan, until 1514, when he went to Rome in the train of Giuliano de' Medici, brother of Leo X., by whom he was introduced to the pope. The latter gave him several commissions; but Leonardo, long accustomed to hold the first rank among artists wherever he resided, soon took umbrage at some disparaging remarks of the pope, and left Rome for Pavia, where Francis I. of France was then holding his court. The French monarch received him with many flattering marks of favor, and in 1516 Leonardo accompanied his new patron to France in the capacity of first painter to the court, with a salary of 700 gold crowns. He was however too much enfeebled by age and sickness to practise his art with vigor, and during the remainder of his life, which was passed in France, he appears to have accomplished little or nothing.—As a painter he was distinguished by surpassing excellence of design, by a depth of chiaroscuro never previously approached, and which might almost entitle him to be called the inventor of that art, and by an extreme softness of execution. Owing to the multiplicity of occupations which he followed, he painted comparatively few pictures, and of those now attributed to him probably not a third are genuine productions of his hand. His practice was to intrust the execution of his designs to his favorite pupils, several of whom, as Luini and Oggione, followed his manner so closely that their pictures are readily mistaken for his. The "Christ disputing with the Doctors" in the British national gallery, and the Herodias in the Florentine gallery, long attributed to Leonardo, are now generally supposed to have been painted by Luini from his cartoons. Of his numerous treatises, the greater part still remain in manuscript in the Ambrosian library at Milan, where are 12 large volumes on the arts, chemistry, mathematics, &c., written, as are all his manuscripts, from right to left, so that it is necessary to employ a looking glass in order to decipher them. His "Treatise on Painting," of which several editions have been published in Italian, English, German, and French, is pronounced by Mrs. Jameson "the foundation of all that has since been written on the subject, whether relating to the theory or to the practice of the art;" and the extracts from his manuscripts published at Paris in 1797, by Venturi, are said by Hallam to be "more like the revelations of physical truths vouchsafed to a single mind, than the superstructure of its reasoning upon any established basis." The same writer adds: "The discoveries which made Galileo, and Kepler, and Maestlin, and Maurolycus, and Castelli, and other names illustrious, the system of Copernicus, the very theories of recent geologers, are anticipated by Da Vinci within the compass of a few pages, not perhaps in the most precise language, or on the most conclusive reasoning, but so as to strike us with something like the awe of preternatural knowledge. If any doubt could be harbored, not as to the right of Leonardo da Vinci to stand as the first name of the 15th century, which is beyond all doubt, but as to his originality in so many discoveries, which probably no one man, especially in such circumstances, has ever made, it must be on an hypothesis, not very untenable, that some parts of physical science had already attained a height which mere books do not record." In the royal library at Windsor there are 3 volumes of his drawings, studies from nature, models of machines, maps and surveys, &c., illustrated by elaborate notes and explanations.

VINCKE, Ernst Friedrich Georg, baron, a Prussian statesman, born at Buch, near Hagen, May 15, 1811. He studied law at Göttingen and Berlin, and, after filling several judicial offices at Berlin, Minden, and Münster, was chosen provost by the estates of the circle of Hagen in 1837. He was a deputy of the nobility of the county of Mark in the provincial assemblies of Westphalia in 1843 and 1845, and in 1847 was a member of the Prussian diet. Having resigned his office of provost in 1848, he was elected by the circle of Hagen to the national assembly of Germany, and was one of the principal leaders of the party which desired the establishment of a constitutional hereditary empire. He was a member of the second Prussian chamber in 1849, 1850–'52, 1853–'5, and 1859–'61, and of the popular chamber in the parliament which met at Erfurt in the spring of 1850. He is regarded as one of the first parliamentary orators of Germany.

VINDELICIA, a province of the Roman empire, bounded N. by the Danube, which separated it from Germany; E. by the Œnus (now Inn), which separated it from Noricum; S. by Rhætia, of which it originally formed a part; and W. by the territory of the Helvetii. It thus comprised parts of the modern countries of Baden, Würtemberg, Bavaria, the Tyrol, and Switzerland. The southern part is mountainous, being occupied by slopes of the Rhætian Alps, but the northern forms an extensive plain, watered by the Danube and its affluents, the Œnus, Isarus (Isar), and Licus (Lech). At the confluence of the latter river with the Vindo or Virdo (Wertach) was the chief town, Augusta Vindelicorum (Augsburg). The eastern part of the Lacus Brigantinus (lake of Constance) was within the limits of the province. The Vindelici, a Celtic people, formed the principal part of the inhabitants. Vindelicia was conquered by Tiberius in the reign of Augustus, and in the 4th century was occupied by the Alemanni.

VINDHYA MOUNTAINS, a range extending across the peninsula of Hindostan from E. N. E. to W. S. W., and uniting the northern extremities of the two great coast ranges, the Eastern and Western Ghauts. They stretch from the basin of the Ganges, about lat. 25° N., to Guzerat, about lat. 22° N., and form the N. boundary of the valley of the Nerbudda, which flows close to their base. Their geological formation is granite and sandstone underlying trap rock. This range formed under the Moguls the boundary between the Deccan on the S. and Hindostan proper on the N.

VINE. See Grape.

VINEGAR. See Acetic Acid.

VINEGAR PLANT, a tough body of branching threads appearing in fluids rich in sugar, and which are undergoing fermentation at low temperatures. When carefully examined, the upper surface will be found to be compactly arranged, so that it will only tear into thin layers. Below these the fibres are looser and gelatinous, and filled with circular or elliptical cell-like forms of extreme minuteness. If a small fragment of these fibres be put into sugar and water, they increase rapidly, and by lateral growth the mass conforms itself to the shape of the vessel which contains the solution. Successive layers are formed, becoming tougher and firmer as they rise upward, and these, if undisturbed, on the exhaustion of the saccharine principle are covered by patches of a blue, green, or yellow mould, and known as *penicillium glaucum.* There is an intimate connection of the branching upright threads of this mould with the fibres of the horizontal layers, indicating that the latter are the *mycelia* or vegetative process of one and the same plant, which at first had produced only buds or *conidia* found so abundantly in the gelatinous strata. The primitive development of all fungi recognizes the mycelium, and in some species this filamentous substance completely occupies the interstices of the annual rings of growth in timber trees, or permeates the ligneous tissues in delicate threads. Other fluids, such as ink, and even pharmaceutical preparations, are infested with filamentous growths called mycoderms, but which are traceable to suppressed conditions of *penicillium.*

VINEIS, Petrus de, or Pietro delle Vigne, an Italian jurist and politician, born in Capua, committed suicide in Pisa in 1249. He was the son of poor parents, was educated at Bologna, and became known by accident to the emperor Frederic II., who raised him from one office to another, and at last made him his chancellor. In this capacity he defended his master both in writing and orally against Popes Gregory IX. and Innocent IV., and it was in great measure owing to him that the excommunications with which the emperor was visited failed of their effect. In 1245 he was probably present at the council of Lyons, before which Frederic was cited, but seems to have been silent; and rumors were spread abroad that he had private conferences with the pope and had betrayed the emperor's interests. In regard to the manner of his disgrace and death there was doubt even in his own time. The popular story was that he either attempted or was accused of attempting to poison his master while ill, and, having been blinded, was led ignominiously on an ass through the streets of Pisa and cast into prison, where he dashed his brains out against the wall. Dante in the *Inferno* (canto xiii.) has introduced him among the suicides telling his mournful story, and has made him the victim of jealousy and cruelty. The extant writings of Vineis are a treatise entitled *De Potestate Imperiali*, and 6 books of letters, often published, on the acts of Frederic II., written in very bad Latin, but of great importance as regards the history of the times.

VINER, Charles, an English lawyer, who lived in the middle of the 18th century. He was the compiler of a stupendous work published under the title of "A General and Complete Abridgment of Law and Equity" (24 vols. fol., 1741–'51), the preparation of which occupied, according to Blackstone, the space of half a century. By his will he bequeathed £12,000 to establish a professorship of common law in the university of Oxford, and to endow fellowships and scholarships. Blackstone was elected the first Vinerian professor.

VINET, Alexandre Rodolphe, a Swiss author and Protestant divine, born in Lausanne toward the end of the last century, died there in 1847. At the age of 20 he was appointed professor of French literature at Basel, and in 1819 was admitted to the ministry. In 1837 he returned to his native city, where he held the chair of theology in the academy, and from 1844 to 1846 delivered lectures upon French literature. As early as 1840 he had resigned his ecclesiastical duties. Among his principal works are: *La liberté des cultes* (Paris, 1826), which gained a prize at the French institute; *Chrestomathie Française* (3 vols. 8vo., 1829–'30), consisting of specimens of French authors with annotations and a valuable *Discours* on French literature; *Études sur Pascal* (1848); and *Études sur la littérature Française au 18ᵉ siècle* and *au 17ᵉ siècle* (3 vols. 8vo., 1849–'57). His *Méditations évangéliques* (1849), most of his *Discours* (2 vols., 1831 and 1841), and some controversial papers have been translated into English.

VINTON, a S. co. of Ohio, drained by Salt and Raccoon creeks; area, 414 sq. m.; pop. in 1860, 13,631. The surface is undulating and the soil very fertile. The productions in 1850 were 249,899 bushels of Indian corn, 27,099 of wheat, 45,161 of oats, 33,788 lbs. of wool, and 6,357 tons of hay. There were 18 churches, and 2,358 pupils attending public schools. Bituminous coal and iron ore abound. The county is intersected by the Marietta and Cincinnati railroad. Capital, McArthur.

VINTON, Alexander Hamilton, D.D., an American clergyman, born in Providence, R. I., May 2, 1807. He was graduated at Brown university, and received the degree of M.D. from Yale college in 1829. After practising medicine for 3 years, he entered the general seminary of the Protestant Episcopal church, and was ordained in New York in July, 1835. He took charge of St. Paul's church, Portland, from Nov. 1835, till April, 1836, and was then for 6 years rector of Grace church, Providence, R. I. He received the degree of D.D. from the university of New York in 1843, and from Harvard college in 1853. From 1842 to 1858 he was rector of St. Paul's church, Boston, then accepted a call from the church of the Holy Trinity, Philadelphia, and in May, 1861, became the successor of the late Dr. Anthon in St. Mark's church, New York. Dr. Vinton has published a volume of sermons, and is the author of a number of occasional discourses and addresses. —Francis, D.D., an American clergyman, brother of the preceding, born in Providence, R. I., Aug. 29, 1809. He entered the military academy at West Point in 1826, and was graduated with high honors in 1830, receiving a commission as 2d lieutenant in the 3d artillery. While stationed at Fort Independence, Boston harbor, he studied at the Harvard law school, and also for 2 or 3 years served as civil engineer on several railroads in New England. He was admitted to the bar at Portsmouth, N. H., in 1834; was on duty in the Creek war in Georgia and Alabama in 1836; left the army in 1837; entered the general theological seminary of the Episcopal church, New York, and was ordained deacon by Bishop Griswold in 1838, and priest in 1839. He was successively rector of St. Stephen's church, Providence, R. I. (1840), Trinity church, Newport, R. I. (1840), Emanuel church, Brooklyn, N. Y. (1844), and Grace church in the same city (1847). He was elected bishop of Indiana in 1848, but declined, and was a prominent candidate for provisional bishop of New York in 1847 and 1851. He was elected an assistant minister of Trinity church, New York, in 1855. Dr. Vinton has published a number of occasional sermons, addresses, &c. The degree of D.D. was conferred upon him by Columbia college in 1848.

VINTON, Justus Hatch, an American missionary, born in Willington, Conn., in 1806, died at Kemendine, Burmah, March 31, 1858. He was educated at the Hamilton literary and theological institution (now Madison university), and in Sept. 1832 was appointed a missionary to Burmah by the American Baptist board; but the visit of the Rev. Dr. Wade to the United States with Burmese and Karen assistants affording opportunity for the acquisition of those languages here, he did not sail for his missionary field till July, 1834. He was designated to labor among the Karens, and was first stationed at Chummerah, 90 miles above Maulmain, and afterward at Newville. In 1851, on his return from a visit to the United States, he took charge of the Karen theological seminary at Maulmain, where he remained till March of the following year, when he removed to Kemendine, a suburb of Rangoon, still devoting his labors to the Karens.

VIOL (It.), an ancient musical stringed instrument, long superseded by the violin and other instruments of that family, of which it may be considered the parent. Its general shape was that of the violin, and it was furnished with 6 and sometimes with more strings, the tones of which were regulated by being brought by the fingers into contact with frets placed at regular intervals along the neck, and was played on by a bow. Viols were of 3 kinds: the treble, called also the *viola alto* or *viol da braccia* (viol of the arm), and which bore some resemblance to the modern violin; the tenor, called *viola tenore* or *viol di spalla* (viol of the shoulder); and the base or *viol di gamba* (viol of the leg), so called because it was held by the performer between his legs. The last named was the survivor of its family, having been in use until the close of the 18th century, nearly 100 years after all other viols had disappeared, and has been superseded by the violoncello. Other species of the instrument were the *viol d'amore* (viol of love), so called from its agreeable, silvery sound, the *viol di bardone*, and the *viola bastarda.*

VIOLA, a larger kind of violin, sometimes called the tenor violin, having 4 strings tuned A, D, G, and C, an octave above the violoncello. It ranges a fifth lower than the violin, and takes the part between the 2d violin and the base. In size and pitch it occupies a place intermediate between the ordinary violin and the violoncello.

VIOLET, the familiar name of a genus of plants typical of the natural order *violaceæ*, including herbs and shrubs with simple, stipulate, usually alternate, sometimes opposite leaves, and a various inflorescence, the irregularity of the flowers being a peculiarity of certain genera. The *violaceæ* are exogens with polypetalous flowers, a many-leaved calyx, hypogynous petals, the stamens all perfect, anthers crested and turned inward, consolidated fruit, and albuminous seeds. They are commonly arranged under two sub-orders or tribes, known as the *violeæ* and *alsodineæ*, the former belonging to the flora of Europe and America, the latter almost exclusively to that of Africa and South America.—The true violets constitute a large genus, of which more than 170 species have been described. They are herbaceous, perennial, rarely annual plants, with short rhizomas or underground stems; alternate leaves; solitary, nodding, or declined flowers, supported on angular peduncles which bear two small bracts; the sepals unequal, more or less auriculate at base; the petals likewise unequal, one spurred at its base; stamens approximated with connate anthers; ovary sometimes surrounded by a concave torus; capsule bursting elastically and dispersing numerous oval-shaped seeds. Two methods of arranging the species to facilitate their study have been proposed, one by Baron Gingins in his *Mémoire sur la famille des violacées* (Geneva, 1823), who employs the form of the stigmas as distinctive, and the other by Professor Forbes in the "Transactions of the Botanical Society," vol. i., who lays much stress on the forms of the spur of the petal (nectary) in connection with a few other characters. The arrangement adopted by Torrey and Gray in their "Flora of North America" is that of Gingins as exhibited in De Candolle's *Prodromus*, giving, in 32 North American species, the representatives of the 3 sections, in which the stigmas are described as either rostrate, capitate, or urceolate. A few of the more common will here be noticed.—Among those with rostrate stigmas, 3-sided capsules, and numerous seeds, found in dry woods and on sandy hills, ranging from British America to Florida and westward to Illinois, is the elegant *V. pedata* (Linn.), with 7-parted leaves and very large bright blue flowers, occasionally paler blue or even white, appearing in May; there is also a superb variety, figured in Loddige's "Botanical Cabinet" as a species under the name of *V. flabellifolia*, with large pale blue flowers, the petals ornamented with dark purple at the edges and velvety at the bottom. The hood-leaved violet (*V. cucullata*, Aiton) blossoms earlier, and has reniform, cordate leaves, cucullate at base, and blue or white flowers; it is a variable species. The arrow-leaved violet (*V. sagittata*, Ait.) has oblong, acute, cordate, and sagittate, slightly pubescent leaves, and middle-sized blue flowers; a variable species likewise. The small yellow violet (*V. rotundifolia*, Mx.) has orbiculate ovate, cordate, crenate, nearly smooth leaves, with pubescent petioles and yellow flowers, the spur almost wanting; it is a pretty plant, and occurs in shady, rocky woods. The small scented violet (*V. blanda*, Willd.) has a broadly heart-shaped foliage and beardless white flowers; it is to be sought in wet meadows, growing in company with the lance-leaved violet (*V. lanceolata*, Linn.), with flowers also white, larger, and beardless. Muhlenberg's violet is a fine species, with large pale blue flowers on very long peduncles, subject to much variation, and found throughout the United States. The tall yellow violet (*V. pubescens*, Ait.) is a charming species, with an erect, villous or smoothish stem, 6 to 12 inches high, and yellow flowers with striate petals; it is subject to many varieties, and grows well under cultivation. The *V. Canadensis* has a nearly smooth stem 6 to 24 inches high, broadly cordate, acuminate, serrate leaves, and middle-sized flowers, the petals slightly twisted, pale within, purplish externally, occurring in shady woods of mountainous districts. The two last named may be cited as instances of the section with capitate stigmas bearing a tuft of hairs on each side. The species of this section belong in many instances to California and the far West. The three-colored violet (*V. tricolor*, Linn.), which in this country has much the aspect of an adventitious plant from abroad, has a somewhat triangular stem, branching and diffused, the lower leaves ovate cordate, stipules very large, the flowers small, with the petals pale blue and yellowish toward the base, the lateral ones bearded; it is to be sought on dry rocky hills from New York to Arkansas; the plant is annual, and represents the 3d section, of species with an urceolate, hairy stigma. This species is however widely represented in Europe and Siberia, and is supposed to be one of the typical forms of the garden pansy, of which De Candolle makes 14 distinct varieties, the *V. t. hortensis* or garden variety being distinguished by its larger petals and the intense velvety hue of their colors. These garden sorts were very much improved and their colors were rich to a remarkable degree; but they have of late years given place to the hybrid varieties of the *V. Altaica* (Pallas), which has a short stem, oval leaves, stipules cuneiform with acute teeth, large yellow flowers, and a variety with large purple flowers; it is likewise perennial. In modern floriculture, a perfect pansy flower is required to have the following properties: a round, flat, and very smooth edge; the petals thick and of a rich velvety texture; the ground color of the 3 lower petals alike, the lines or pencillings in the centre bright and distinct, the two upper petals (which always are of a different color from the others) perfectly uniform; the flower measuring at least one inch and a half across. Such specimens of cultivation are preserved only by careful attention, propagating them from cuttings or layers, the best flowers however being chosen in the selection of seed.—Many of the European violets are very beautiful, such as the dog's violet (*V. canina*, Linn.), a perennial 3 inches high, with large blue flowers; the hairy violet (*V. hirta*), an upright blue-flowered perennial; the *V. palustris*, with small, pale violet-colored flowers; the *V. pratensis* (Mert.), with bright blue flowers; the 2-flowered violet (*V. biflora*, Linn.), with yellow flowers, and native of the Swiss Alps; the *V. lutea* (Hudson), with larger flowers than the tricolor, which it resembles, minutely described by Lightfoot in his *Flora Scotica* ast he *grandiflora;* the sweet-scented (*V. odorata*, Linn.), perhaps the most agreeable of all, and a universal favorite. It is a low, creeping, stoloniferous plant, increasing rapidly and sending up numerous flowers in early spring. Its most ordinary color is blue, but there are several varieties known, both in the wild and cultivated state, such as the white, purple, double purple, double white, pale blue, and double blue, and the horned, when the petals are all spurred. A variety with a cespitose habit of growth and abundance of double pale blue blossoms, known as the Neapolitan, is much employed in frames for early winter and spring forcing. The species enjoys some medical reputation among apothecaries in certain parts of England. An alkaloid of poisonous properties known as violine is extracted from the root, stem, leaves, and flowers. It seems to have been a familiar plant among the ancients, imparting flavor to wine; it is the ιον πορφυρεον of Dioscorides. Among the Gaelic tribes, the plant was considered a cosmetic. Its perfume is delicious, but too overpowering to some constitutions, producing faintings and giddiness. Its seeds and petals possess gentle laxative properties.—The several plants of the order are economically employed in various ways. The foliage of a Brazilian species of *conohoria* is eaten like spinach, and some species of *ionidium*, known in Peru as *cuchunchully*, are violent purgatives and emetics; while others have similar qualities to the ipecacuanha.—The violets readily adapt themselves to cultivation, growing generally in good shady soil, those of America preferring leaf mould or peat.

VIOLIN, an instrument of the viol species, consisting of 3 principal parts, the neck, the table, and the sounding board, over which are stretched 4 gut strings, the lowest covered with silver wire, extending from the tail piece or lower end of the sounding board to the neck, where they are fastened by screws by which they are tightened or loosened at pleasure. A bridge placed upon the sounding board bears up the strings, and above the bridge are 2 apertures in the shape of the letter S. The strings are tuned in fifths, E, A, D, G, and the compass of the instrument exceeds 3 octaves. In concerts it generally makes the treble or highest parts. Its style and sound are adapted to every variety of music, but only in the hands of a skilful performer can its resources be properly developed. The violin assumed its present shape about the commencement of the 17th century, and, although countless attempts have since been made to improve upon its construction, it not only remains without material change, but the oldest violins are esteemed the best. Among these are the celebrated instruments manufactured by the Amati, Straduarius, and Guarnerius, families of Cremona, who flourished during the 17th century and the early part of the 18th. Jacob Steiner of Apsam, in the Tyrol, a pupil of the Amati, was also a famous maker of violins. Among those who have been distinguished as violinists are Corelli, Tartini, Viotti, Rode, Kreutzer, Baillot, Spohr, Paganini, De Bériot, Vieuxtemps, Sivori, Ernst, and Ole Bull; Paganini being especially identified with the instrument.

VIOLLET-LEDUC, Eugène Emmanuel, a French architect, born in Paris, Jan. 27, 1814. He has made Gothic architecture a special study, beside giving considerable attention to Greek and Roman styles, and since 1840 has been almost constantly employed in the restoration of old churches and public buildings, principally in the south of France. Between 1845 and 1856, in conjunction with J. B. A. Lassus, he superintended the restoration of the cathedral of Notre Dame in Paris and the construction of the new sacristy attached to the building. He is the author of a *Dictionnaire raisonné de l'architecture Française du XI*^{me} *au XVI*^{me} *siècle*, still in the course of publication, an *Essai sur l'architecture militaire au moyen âge*, and other works, evincing a strong predilection for mediæval architecture. He has also a considerable reputation as a painter in water colors, in which capacity he has exhibited pictures on architectural subjects.

VIOLONCELLO (diminutive of It. *violone*, a double base), a musical instrument of the violin family, intermediate between the viola and the double base, being an octave lower than the former and an octave higher than the latter. It has 4 gut strings, the 2 lowest covered with silver wire, is tuned in fifths, A, D, G, and C, and is played upon by a bow, being placed between the knees of the performer like the old *viol di gamba*, which it has superseded. Its tone is eminently rich and expressive, and in the hands of performers like Dragonetti it has been rendered an effective solo instrument.

VIOLONE, a name sometimes applied to the instrument commonly known as the double base. (See Double Base.)

VIOTTI, Giovanni Battista, an Italian violinist, born at Fontanento, Piedmont, in 1755, died in Brighton, England, March 3, 1824. He studied under Pugnani, who enjoyed the highest reputation in his day. Before he had attained his majority Viotti was appointed first violinist in the royal chapel in Turin, and afterward visited Berlin and Paris. During the French revolution he held for a time a seat in the constituent assembly, but fled to London when the reign of terror began, and occupied for a short period the position of leader of the band in the King's theatre. Ordered for some reason to quit the country, he went to Hamburg, but returned to London in 1801, and lost all his property by embarking in the wine trade. He then assumed the direction of the royal academy of music at Paris, in which he met with no success. His remaining years were spent in England. He is now remembered chiefly by his *Six duos concertans pour deux violons*, published at Hamburg.

VIPER (Lat. *vivipara*, bringing forth young alive), the common name of the *viperidæ*, a family of old world venomous serpents, distinguished from the rattlesnakes of the new by the absence of pits on the sides of the face and rattles on the tail. There are about 20 species, most abundant in warm climates, and especially in Africa; 3 species occur in Europe. The common European viper or adder (*vipera* [*pelias*] *berus*, Daud.) rarely attains a length of more than 2 feet; the general color is yellowish or olive brown, with a double row of black spots on the back, sometimes united into bands, and paler on the sides with black spots; the single abdominal scutes are about 140, and the caudal 40 to 43 pairs; the eyes are small and very brilliant. It is distributed over Europe, from Sweden and N. Russia to the Mediterranean; it is the only venomous reptile found in Great Britain, where it is common in some parts, especially on the heaths and in the hedges of dry stony districts. Unlike the common snake, it faces any suspected enemy, with body closely coiled, head and neck raised and ready to strike as soon as it comes within reach; dogs when hunting are frequently bitten, but not often killed. Its poison is sufficiently powerful to produce very painful and occasionally dangerous effects, particularly in warm regions and in debilitated constitutions; after a viper bite there is acute pain in the wound, with livid swelling, faintness, quick and irregular pulse, nausea and vomiting, and cold sweats. The remedies relied upon by viper catchers are draughts of olive oil and embrocations to the limb in front of a fire; the application of cupping glasses to the wound, and the internal administration of ammonia or of alcoholic stimulants, are generally sufficient; the celebrated *axungia viperina*, which was believed to render this bite as harmless as a simple wound, was made of the fat of the viper boiled down. Viper broth and viper wine were in old times in high repute for purifying the blood and invigorating worn-out constitutions, and these reptiles formed a necessary article in the shop of the apothecary; even the Greeks and Romans made use of the viper in medicine. It remains torpid in winter in holes, many being twined together; the young are born alive, 12 to 20 at a birth, the membrane of the eggs, according to Bell, being burst at the moment of exclusion; the food consists of insects, worms, mice, shrews, young birds, &c. The southern viper (*V. aspis*, Schl.), of S. Europe, is more dangerous than the common species.—The horned viper (*cerastes Hasselquistii*, Laur.) is about 14 inches long, in color above ranging from ashy gray to yellowish red and even much darker, with indistinct spots, and pale rose below with a pearly lustre; the scales are lancet-shaped and strongly ridged; the head is triangular, and very distinct from the neck from the prominence of the angles of the jaws; near the middle of each arched eyebrow in the male is a slender, pointed spine or horn, slightly bent forward, which, though not a weapon, gives the head a malignant look; the body is thick, and the tail short and suddenly pointed. It is found in N. Africa, Arabia, and western Asia, and was well known to the ancients; it is the serpent represented on the Egyptian monuments, and is very generally believed to have been the asp by which Cleopatra destroyed herself. (See Asp.) It is indolent in habit, remaining buried in the hot sand till aroused by hunger or attacked, when it is very active, springing 2 or 3 feet; when it bites it retains a firm hold, and makes no haste to escape like most serpents. The old authors assert that it conceals itself in the sand, with only the tips of the horns projecting, which serve as baits to decoy birds within reach, a habit similar to that ascribed to the goose fish or angler; it is said also to lie hid in the paths, and to bite men and animals passing by, a habit referred to in the Bible, where it is called adder; being an inhabitant of the desert, it can abstain from water for a long time. A species named *nasicornis*, perhaps a variety of the last, is found in W. Africa; it is about 3 feet long and 9 inches in circumference, its horns giving it a very repulsive look; it feeds principally on rats, small reptiles, and fish of marshy places; its bite is much dreaded by the natives, and is often speedily fatal; they suck the wound, make a free incision, and apply the juices of particular plants; it makes its presence known by a sound like a suppressed groan, followed by a hissing or blowing sound; it darts forward from its powerful tail as a fulcrum. The common cerastes is still a favorite species with Arabian snake charmers in their public exhibitions. The short-tailed viper or puff adder (*V.* [*clotho*] *arietans*, Schl.), from the Cape of Good Hope, is the most deadly serpent of S. Africa; it is about 3 feet long and 2 inches in diameter, of a brown color, with an angular cross band, a pale line behind it and a red band across the eyes.—The death viper or adder of Australia (*acanthophis cerastinus*, Lacép.), 1½ to

2 feet long, and brownish gray tinged with reddish, is much dreaded by the colonists, as the name imports.—The viper is one of the reptiles which have a distribution very far north, and the furthest of the snakes. It is also one popularly believed to take its young when in danger into its throat; though some have declared this anatomically impossible, there is reason to believe it true, according to Dr. Crisp ("Proceedings of the Zoological Society of London," 1855, p. 191).

VIREO, or Greenlet, a common name of a family of American insectivorous birds, coming nearest to the shrikes in the form of the bill and in some of their habits. The general plumage is more or less tinted with green and olive. In the typical genus *vireo* (Vieill.), since subdivided by Prince Bonaparte into *vireosylvia* and *vireolanius* or *lanivireo*, the bill is short and strong, nearly straight, notched and hooked at the tip, with a few weak bristles at the gape; wings long and pointed; toes moderate, the lateral ones partly united to the middle at the base, and capable of holding their insect prey as in the shrikes; tail moderate and even. There are about 20 species, all of small size, migrating from South America and the West Indies to the United States, arriving here about May, breeding in the summer, and returning in autumn; many are sweet singers. They are very active, feeding on insects and their larvæ, which they take on trees or on the wing, and sometimes on berries; the nest is made in trees and bushes, of dried leaves, grasses, roots, moss, and lichens, and is generally pendulous; they exhibit great jealousy of any intruder on their retreats, and scold and chatter in a most extraordinary manner; most have 2 broods in a season, with 4 or 5 eggs, white with brown or black spots; their nests are often selected by the cowpen bird (see Troopial) for the reception of its parasite eggs. The red-eyed vireo (*V. olivaceus*, Vieill.), the type of *vireosylvia*, is 6½ inches long and 10½ in alar extent; the upper parts and tail are bright olivaceous green; crown ashy, bordered on each side by a dusky line within a white superciliary one; nearly pure white below, under tail coverts with a faint sulphur tinge; iris red. It is found from the eastern United States to the Missouri, S. to Texas and Central America, and N. to Greenland. The nest is very neatly made, suspended from twigs 4 or 5 feet from the ground; beside the usual materials, it includes bits of hornets' nests, flax, and paper, glued together, according to Wilson, by the silk of caterpillars and the bird's saliva; it is so durable that other birds, like the yellow bird, have been known to build in the preceding year's nest; even mice have sometimes occupied it after the bird has left it. A more southern species, much resembling this, the *V. attiloquus* (Gray), is popularly called "Whip-Tom-Kelly," from a fancied resemblance of its notes to those words; Mr. Gosse thinks they resemble more "John-to-whit," and Dr. Bryant adds to the former the syllables "pheuu, wheuu," much prolonged.—The white-eyed vireo (*V.* [*lanivireo*] *Noveboracensis*, Bonap.) is about 5 inches long and 8 in alar extent; it is olive green above and white below; ring around eyes, extending to bill, greenish yellow; 2 bands on wings and edge of inner secondaries white; sides of head and breast strongly tinged with yellow; iris white. It is found in about the same extent as the preceding, but not so far north; it so often introduces fragments of newspapers into its nest, that it goes in some places by the name of the politician.—The solitary vireo (*V.* [*lanivireo*] *solitarius*, Vieill.) is 5¼ inches long and 9¼ in extent of wings; head and neck above dark bluish ash, rest of upper parts olive green; white ring around eyes, extending interruptedly to bill; lower parts, 2 bands on wings, and edge of secondaries, white; under wings greenish yellow. It is found in the United States from the Atlantic to the northern Pacific.

VIREY, Julien Joseph, a French physician, born in Hortes, department of Haute-Marne, in Nov. 1775, died in Paris, March 29, 1846. He was educated at Langres, became an assistant dresser in the military hospital of Strasbourg, and attracted the notice of Parmentier, who in 1795 sent him to study at the hospital of Val de Grâce at Paris, of which he became chief pharmaceutist in 1812, but resigned soon after, and two years later received the diploma of doctor of medicine from the faculty of Paris. He was a member of the superior council of health, and from 1831 to 1838 held a seat in the chamber of deputies. At the time of his death he was an officer of the legion of honor and a member of various learned societies. Early in the present century he became editor of the *Journal de pharmacie*, and before receiving his medical degree had written the majority of the general articles in the *Dictionnaire des sciences naturelles* of Déterville and the *Dictionnaire des sciences médicales* of Panckouke. His principal works are: *Histoire naturelle du genre humain* (3 vols., 1801); *Histoire naturelle de la femme* (last ed., 1825); *Art de perfectionner l'homme* (2 vols., 1808); *De la physiologie dans ses rapports avec la philosophie* (1814); *Histoire des médicaments, des aliments et des poisons* (1820); and *Philosophie de l'histoire naturelle* (1835).

VIRGIL (Publius Virgilius Maro), a Roman poet, born in Andes, a small village near Mantua, Oct. 15, 70 B. C., died in Brundisium, Sept. 22, 19 B. C. His birthplace, according to an old tradition, is the same as the modern town of Pietola. His father was the owner of a small landed estate, and the son received his early education at Cremona and Mediolanum (Milan), and assumed the *toga virilis* at the former city in 55 B. C., on the very day, according to Donatus, that the poet Lucretius died. Afterward he is said to have studied Greek at Naples under Parthenius, a native of Bithynia, beginning the acquisition of that wealth of learning for which he was almost as remarkable as for poetical power. Poetry was by no means his only study. Traces of Epicurean opinions can be found in his works, and throughout his whole life he was a student of medicine, of agriculture, and of mathematics. Naturally of a delicate constitution, and not entitled by birth to the rights of a Roman citizen, he never attempted to gain distinction either by oratory or arms, and seems to have retired to his father's estate near Mantua. Here a new difficulty arose, of which we only know the existence without knowing certainly the history or result. The battle of Philippi had proved fatal to the senatorial party, and had left Octavius and Antony masters of the Roman world. The former on returning to Italy began to fulfil his promise of assigning to his veteran troops certain portions of the lands of Italy. A colony of these soldiers was settled near Mantua, and, according to the common story, Virgil was included in the general calamity. Through the interest of some friends, especially of Asinius Pollio, his estate was restored to him, and his good fortune was made the subject of the first eclogue. His farm is said to have fallen into the hands of Areus, a centurion, who was little disposed to relinquish his claim, and gave the rightful owner so warm a reception, that he was forced to swim over the Mincius to save his life. This treatment was made the subject of the 9th eclogue. He went to Rome a second time, but the success of his application is not certainly known. It is probable, however, that after this period he resided part of the time in the capital, where he became a favorite of Mæcenas, to whom he had been introduced by Pollio, and of Augustus. It is related that, in order to compliment his prince, he affixed to the gates of the palace the following lines:

Nocte pluit tota, redeunt spectacula mane:
Divisum imperium cum Jove Cæsar habet.

Augustus was anxious to find out the author of the lines, but Virgil was too diffident to avow himself; whereupon a poet named Bathyllus claimed that he had written them, and was richly rewarded. Virgil was indignant, and, writing the same lines upon the palace gate, wrote under them: *Has ego versiculos feci, tulit alter honores*, together with the beginning of another line, *Sic vos non vobis*, repeated four times. Augustus demanded that the lines should be finished, but none were able to do it until Virgil came forward, avowed himself the author of the previous distich, and finished the lines he had begun in the following manner:

Sic vos non vobis nidificatis aves;
Sic vos non vobis vellera fertis oves;
Sic vos non vobis mellificatis apes;
Sic vos non vobis fertis aratra boves.

The poet seems to have spent his time partly at Rome and partly at Tarentum and Naples, which last appears to have been his favorite residence. In 19 B. C. he went to Greece with the intention of remaining in that country several years for the purpose of laboring on the Æneid. The same year he met the emperor at Athens, and returned with him to Italy. His constitution, naturally feeble, soon gave way entirely, and he died shortly after his arrival at Brundusium. His remains were carried to Naples, and buried on the road leading from that city to Puteoli. The monument called the tomb of Virgil may be the site of his grave, and the tradition that it is such certainly receives the unquestioned support of the great men of the middle ages. It is said, though on doubtful authority, that he himself wrote the following inscription, which was placed on his tomb:

Mantua me genuit, Calabri rapuere, tenet nunc
Parthenope. Cecini pascua, rura, duces.

—The earliest works of Virgil were the Bucolics, which were written probably between 41 and 37 B. C. Although modelled after the pastoral poems of Theocritus, they are pastoral only in name. Many of them treat of matters of present interest, unconnected with any description of rural sights or sounds; and the 4th eclogue, addressed to Pollio, does not even pretend to be a pastoral poem. They were however the first of their kind which had appeared in the Latin language, and, though far inferior to the productions of Theocritus, were exceedingly popular with the Romans. The Georgics are a didactic poem in 4 books, addressed to Mæcenas, and by far the most finished of Virgil's productions. The 1st book treats of the proper cultivation of the soil, the 2d of the management of fruit trees, the 3d of horses and cattle, and the 4th of bees. The subject seems unpromising for a poem of much interest; but he embellished the monotonous and uninteresting details of agricultural life with apt allusions and skilful ornament, and occasionally with beautiful digressions. The story that he wrote this work at the request of Mæcenas to revive the languishing agriculture of Italy, and that in consequence the country soon assumed a flourishing appearance, is improbable. The Æneid, or the adventures of Æneas after the fall of Troy, is the great epic poem of the Romans. It is in 12 books, the first 6 of which were modelled after the Odyssey, and the last 6 after the battles of the Iliad. It is said that Virgil, who did not live long enough to revise and perfect the poem, desired it to be destroyed, but that the order was countermanded by Augustus, and thus the manuscript was preserved. The poet interwove with the adventures of Æneas allusions to the glories of the Julian line, of which he was the assumed ancestor, and prophecies of the future splendor of the city of which he was indirectly the founder. Although the Æneid as a whole is inferior to the great works upon which it is modelled, and the characters of many of the actors, especially of the chief hero Æneas, are comparatively uninteresting, yet the particular scenes and incidents are treated in the most successful manner and with the highest degree of poetical feeling. Original genius did not belong to Virgil, but his taste, his skill, and his power of versification were unsurpassed. Other poems beside these are attributed to him, but probably without reason. His influence on Roman literature and the literature of the middle ages was almost without a parallel in literary history. His poems were the text books of the Roman youths and the models of the Roman poets. The great men of the middle ages were his admirers and imitators. Among the ignorant he was esteemed a magician and conjurer, and Petrarch tells us that the grotto of Posilippo was thought in his time to have been excavated by the magic incantations of the poet. Traces of this feeling can be found in the custom of inquiring into the future by the *sortes Virgilianæ.*—Several manuscripts of Virgil's works have come down to our time. The first edition was printed at Rome in 1469 by Sweynheym and Pannartz. C. G. Heyne published an edition (4 vols. 8vo., Leipsic, 1767-'75) upon which much labor was spent, and of this an improved edition appeared in 1830. There have been several English versions, of which that of Dryden in heroic verse (1697) is by far the most popular. The chief authority for Virgil's life is a biography by Donatus. Commentaries were written on his works in ancient times, especially by Macrobius and Servius, the latter of which is very valuable.

VIRGIN ISLANDS, a group of the West Indies, spread over an area of about 100 by 20 m., between lat. 18° 5′ and 18° 50′ N., and long. 64° 10′ and 65° 40′ W. They are about 100 in number, 50 of which, including Tortola, Anegada, Virgin Gorda, Jost van Dyke's, Guano Isle, Beef island, Thatch island, Prickly Pear, Camanas, Cooper's, St. Peter's, and Salt, belong to Great Britain; St. Thomas, Santa Cruz, St. John, and several smaller ones to Denmark; Culebra and a number of islets to Spain; and Bieque, or Crab island, to all three powers. Not more than one fourth of the group are inhabited. Those which are cultivated have a rich soil, producing abundance of vegetables and fruits; and sugar, molasses, rum, indigo, salt, cotton, tobacco, turmeric, pimento, and ginger are exported. The climate is variable, and there are occasional earthquakes. The group was discovered by Columbus in 1494, on his second voyage.

VIRGIN MARY. See Mary.

VIRGINAL, a keyed and stringed instrument, now out of use, somewhat like the spinet, but in shape resembling the modern pianoforte. It is supposed to have been named in honor of the virgin queen Elizabeth of England, although known before her birth. Its compass was about 4 octaves.

VIRGINIA, one of the 13 original states of the American Union, situated between lat. 36° 30′ and 40° 38′ N., and long. 75° 10′ and 83° 43′ W. Its greatest length from E. to W. is about 425 m., its mean length 350 m.; its greatest breadth from N. to S., including the "Panhandle" (a narrow strip of land lying between the W. boundary of Pennsylvania and the Ohio river, and comprising Marshall, Ohio, Brooke, and Hancock counties), is 280 m., its mean breadth 210 m. Its area is 61,352 sq. m., or 39,265,280 acres. It is bounded N. by Ohio, Pennsylvania, and Maryland; E. by Maryland, and the Atlantic ocean; S. by North Carolina and Tennessee; and W. by Kentucky and Ohio. It is divided into 148 counties, viz.: Accomac, Albemarle, Alexandria, Alleghany, Amelia, Amherst, Appomattox, Augusta, Barbour, Bath, Bedford, Berkeley, Boone, Botetourt, Braxton, Brooke, Brunswick, Buchanan, Buckingham, Cabell, Calhoun, Campbell, Caroline, Carroll, Charles City, Charlotte, Chesterfield, Clarke, Clay, Craig, Culpepper, Cumberland, Dinwiddie, Doddridge, Elizabeth City, Essex, Fairfax, Fauquier, Fayette, Floyd, Fluvanna, Franklin, Frederic, Giles, Gilmer, Gloucester, Goochland, Grayson, Greenbrier, Greene, Greenville, Halifax, Hampshire, Hancock, Hanover, Hardy, Harrison, Henrico, Henry, Highland, Isle of Wight, Jackson, James City, Jefferson, Kanawha, King and Queen, King George, King William, Lancaster, Lee, Lewis, Logan, Loudon, Louisa, Lunenburg, McDowell, Madison, Marion, Marshall, Mason, Matthews, Mecklenburg, Mercer, Middlesex, Monongalia, Monroe, Montgomery, Morgan, Nansemond, Nelson, New Kent, Nicholas, Norfolk, Northampton, Northumberland, Nottoway, Ohio, Orange, Page, Patrick, Pendleton, Pittsylvania, Pleasants, Pocahontas, Powhatan, Preston, Prince Edward, Prince George, Prince William, Princess Anne, Pulaski, Putnam, Raleigh, Randolph, Rappahannock, Richmond, Ritchie, Roane, Roanoke, Rockbridge, Rockingham, Russell, Scott, Shenandoah, Smyth, Southampton, Spottsylvania, Stafford, Surry, Sussex, Taylor, Tazewell, Tucker, Tyler, Upshur, Warren, Warwick, Washington, Wayne, Webster, Westmoreland, Wetzel, Wirt, Wise, Wood, Wyoming, Wythe, York. Richmond, situated on the James river in Henrico co., is the largest town and the capital of the state. The other chief cities and towns are Petersburg, on the Appomattox river; Norfolk, a seaport on the large estuary called the Elizabeth river; Portsmouth, on the opposite bank; Wheeling, on the Ohio; Staunton, the principal town of the Shenandoah valley; Alexandria, on the Potomac; Lynchburg, on the James river; and Fredericsburg, on the Rappahannock.—The population of Virginia, according to the decennial censuses since 1790, has been as follows:

Census years.	Whites.	Free colored.	Slaves.	Total.	Decennial increase, per cent.
1790....	442,115	12,766	293,427	748,308	....
1800....	514,280	20,124	345,796	880,200	17.63
1810....	551,534	30,570	392,518	974,622	10.73
1820....	603,087	36,889	425,153	1,065,379	9.31
1830....	694,300	47,348	469,757	1,211,405	13.71
1840....	740,858	49,852	449,087	1,239,797	2.34
1850....	894,800	54,333	472,528	1,421,661	14.67
1860....	1,047,411	58,042	490,865	1,596,318	12.28

Of the white population in 1860, there were 528,897 males and 518,514 females; of the free colored, 27,721 males and 30,321 females; and of the slaves, 249,483 males and 241,382 females. The density of the population was 26.02 to the square mile, and its proportion to that of the whole Union was 5.07 per cent. There were enumerated 889 deaf and dumb persons, of whom 121 were slaves; 789 blind, of whom 232 were slaves; 1,179 insane, of whom 58 were slaves; and 1,279 idiotic, of whom 214 were slaves. The ages of the total population in 1850[*] were returned as follows: under 1 year, 36,308; 1 and under 5 years, 184,163; 5 and under 10, 208,260; 10 and under 15, 190,896; 15 and under 20, 153,511; 20 and under 30, 241,413; 30 and under 40, 157,164; 40 and under 50, 111,077; 50 and under 60, 70,597; 60 and under 70, 41,693; 70 and under 80, 18,535; 80 and under 100, 7,210; over 100, 389; unknown, 385. Total under 20 years of age, 773,138; over 20, 648,523. Of the 389 persons over 100 years of age, 271 were slaves and 55 free colored. The number of births (white and free colored) in 1850 was 25,153; marriages, 8,163; deaths, 10,608, or including slaves, 19,059. Of the total free population of the state in 1850 (940,133) there were born in the state 872,923; in other states, 53,231; in England, 2,998; in Ireland, 11,643; in Scotland and Wales, 1,120; in British America, 235; in Germany, 5,511; in France, 321; in other countries, 566; unknown, 585. About 2½ per cent. of the white population were of foreign birth; and 388,059 persons of Virginian birth were residing in other states. Of 226,875 white and free colored males over 15 years of age in 1850, there were engaged in commerce, trade, manufactures, mechanic arts, and mining, 52,675; in agriculture, 108,304; in labor not agricultural, 48,338; in the army, 274; in sea and river navigation, 3,263; in law, medicine, and divinity, 4,791; in other pursuits requiring education, 5,622; in government civil service, 1,491; as domestic servants, 79; and in other occupations, 1,978. The number of slaveholders in 1850 was 55,063, of whom were holders of 1 slave, 11,385; 1 and under 5, 15,550; 5 and under 10, 13,030; 10 and under 20, 9,456; 20 and under 50, 4,880; 50 and under 100, 646; 100 and under 200, 107; 200 and under 300, 8; 300 and under 500, 1. The whole number of paupers supported in the state in the year ending June 1, 1850, was 5,118, at a cost of $151,722. The federal representative population (all the free and ⅗ of the slave) in 1860 was 1,399,972, entitling Virginia to 12 representatives under the new apportionment. —Virginia is well watered. Chesapeake bay, although the greater part of its length is in Maryland, opens into the ocean between the capes of Virginia, and receives the rivers which drain the E. and N. E. part of the state. The Potomac river forms the boundary between Virginia and the whole W. and S. line of Maryland, and by its affluents, the North and South branches, and the Shenandoah, drains the upper portion of the valleys of the Alleghanies; it is navigable for large vessels to Alexandria and Washington, over 100 m. from the bay. The Rappahannock, with its affluents, the North fork and Rapidan, is navigable as far as Fredericsburg for vessels of 140 tons. The Piankatank is a broad, shallow frith, forming the outlet of a smaller stream. The York river, formed by the junction of the Mattapony and Pamunkey rivers, is navigable to the point of union at West Point for large vessels. The James river rises in the Alleghanies and pursues a general E. S. E. course, receiving in its route only one considerable affluent, the Appomattox. The Elizabeth and Nansemond rivers in the extreme S. E. communicate with the Dismal and other swamps. All these rivers have their outlet into Chesapeake bay by means of broad, though generally not very deep estuaries. The estuary of Elizabeth river, and Hampton roads adjacent, form one of the finest harbors on the Atlantic coast, and were before the civil war the favorite resort of the vessels of the U. S. navy, the navy yard at Gosport, near Portsmouth, being the most extensive in the United States. The southern portion of the state is drained by the Roanoke and its numerous affluents, of which the Dan, Staunton, and Banister are the principal, and by the Meherrin and Blackwater, two branches of the Chowan, a river of North Carolina. Both the Roanoke and Chowan discharge their waters into Albemarle sound. S. W. Virginia is watered by the Holston and Clinch, the head streams of the Tennessee, and their branches; while the valleys of the W. and N. W. are drained by the Sandy, the Guyandotte, and the Great and Little Kanawha and their branches, all affluents of the Ohio, and the Monongahela with its tributaries the Youghiogheny and Cheat, and their numerous branches. The Ohio itself forms the N. W. boundary of the state, from Catlettsburg to the Pennsylvania line, a distance of nearly 300 m. A long narrow peninsula, known as the eastern shore of Virginia, comprising the counties of Accomac and Northampton, extends from lat. 38° to Cape Charles, and forms the eastern barrier between the lower Chesapeake bay and the Atlantic. Along the Atlantic shore of this peninsula, as well as along a part of the coast below the North Carolina line, extend a series of sand bars or spits with occasional narrow inlets, the result of the washing up of the sand from the ocean on some shallow reefs, perhaps of coralline origin, at a distance of from 2 to 10 m. from the coast of the peninsula, and in some places connected with it by extensive sand drifts. Between these sand spits and the mainland of the peninsula are the Broadwater and other sounds and roadsteads, and in some cases islands of considerable extent. The shores of that portion of the Chesapeake bay within the limits of Virginia are indented by numerous small bays, inlets, and sounds, forming safe anchorage ground for small craft, and abounding in shell fish. —Eastern Virginia, though hilly, is not mountainous, and S. E. Virginia is a rolling country, with extensive swamps in many parts. The N. W. part of the state is also undulating and occasionally broken, and slopes gently toward the Ohio, but without many lofty hills. That portion of the state extending from the upper waters of the Potomac (from the W. boundary of Maryland to a point a few miles above the District of Columbia) to the S. W. line of the state, occupying an average breadth of about 100 m., is traversed by 4 principal ranges of mountains, all comprised in the Appalachian system; and from these extend numerous spurs and parallel lines of hills having the same general course from N. E. to S. W., which render this part of the surface of the state extremely broken, and often almost impassable. Beginning with the eastern slopes, we come first to a low range, parallel to the Blue ridge, and apparently an outlier of it, known at different points as the Kittoctan, Bull Run mountains, South-West mountains, Carter's, Green mountain, Buffalo ridge, Smith's mountain, and Turkey Cock mountain. Between this and the Blue ridge extend spurs of low heavily wooded hills, alternating with swamps and mountain torrents. The Blue ridge, the easternmost of the true Appalachian ranges, is a much higher chain; its western slope is more abrupt than its eastern, and though broken through by the James river at Balcony falls, it maintains throughout its course in the state a more nearly uniform height than either of the other ranges. West of this range lies the broad and fertile valley of the Shenandoah, and beyond this the Great North or Shenandoah mountains, a narrow, well defined ridge toward the central and S. W. portions of its course, but in the N. E. part spreading out like a fan into 13 or 14 distinct ridges. Still W. of this lies the Alleghany or Eastern Front ridge, which toward the S. W. receives also the name of Peter's mountain and Clinch mountain; and between this and the Shenandoah range on the E. and the Greenbrier and Laurel ranges on the W. are numerous short parallel ridges, of which the most considerable are Potts's or Middle, Warm Spring, and Jackson's River mountains. The westernmost of these continuous chains is the Laurel ridge, with its prolongations the Greenbrier and Flat Top mountains. Near the line of Randolph co. the Greenbrier mountains throw off a spur eastward to the Alleghany range, and from this half a dozen parallel ridges following the usual course of the mountain ranges of the state, and known as Rich, Middle, Shaver's, Cheat, and Valley mountains. The Great Flat Top mountain, as the S. W. portion of this fourth ridge is called, also throws out spurs N. and N. W., called the White Oak mountain and Barker's ridge, and as it approaches the Tennessee line passes N. to the Clinch river, and takes the names of Powell's mountain, Stone mountain, and Dividing ridge. At the dividing line between Virginia and Kentucky, the Cumberland mountains enter the state, and continue for some distance to the southernmost branch of the Big Sandy, taking the name of the Big Black mountains in the upper part of their course. North of these, but in the region S. of the Great Kanawha, are ranges of hills following the course of the Guyandotte and other streams, and obeying no general rule in their course. The principal of them are the Guyandotte, Great Cherry Pond, Huff's, Tug, and Alum mountains. The highest peak in the state is White Top in Grayson co., 6,000 feet above the sea level; the next highest are the Peaks of Otter, between Bedford and Botetourt counties, about 4,260 feet. The valley of Virginia, as the fertile tract watered by the Shenandoah and affluents of the James is called, is from 1,200 to 1,500 feet above the sea.—The eastern portion of Virginia is composed wholly of tertiary sands, clays, and marls, the newer pliocene and deposits belonging to the present epoch being found along the borders of the Chesapeake and the Atlantic ocean; while further inland strata of the miocene group emerge from beneath these and abut against the highest platform of granite, gneiss, and other metamorphic rocks, the eastern margin of which is defined by a line connecting the lowest falls upon the principal rivers. These falls, which also limit the navigation of the streams in ascending from the sea, mark the sites of the principal cities, as Fredericsburg, Richmond, and Petersburg. From Petersburg the diverging line between the two formations extends S. S. W., leaving the state in the S. E. corner of Mecklenburg co. The miocene strata abound in fossil shells, little altered in appearance from those of living beds along the coast, and furnish most valuable material for fertilizing the soil of this region. The metamorphic belt stretches westward over the summit of the Blue ridge, and widens rapidly toward the S., reaching as far as Grayson and Carroll cos., on the line of North Carolina. This is the metalliferous belt of the state, and contains the gold mines, the range of which is through the counties of Culpepper, Orange, Spottsylvania, Louisa, Fluvanna, Buckingham, Prince Edward, &c. Up to June 30, 1861, the gold from these mines deposited in the U. S. mint and the assay office amounted to $1,558,489.41. In their vicinity numerous beds of iron ore of great extent are met with, of varieties easy to work, in districts abounding in wood, and near to railroads and navigable rivers. They have, however, been but little worked. Copper ores are found in Louisa co., and have been mined to a very moderate extent. Copper and lead occur at numerous localities along the range of the Blue ridge, and the mines of the former in Grayson and Carroll cos. have proved of considerable importance. (See COPPER.) Strata of the upper secondary extend in two parallel and narrow belts, following the general direction of the Blue ridge through a considerable portion of the metamorphic district. The formation is a continuation of that traced through Massachusetts, Connecticut, New Jersey, Pennsylvania, and Maryland. Its eastern division crosses the James river a few miles above Richmond, and terminates a little S. of the Appomattox river on the southern border of Amelia co. In it lie the coal mines of the James river, which are referred to the oolite period. (See COAL, and GEOLOGY.) The great valley of Virginia, W. of the Blue ridge, extending through the central counties of Rockingham, Augusta, Rockbridge, Botetourt, Roanoke, Montgomery, Pulaski, Wythe, and Smyth, to the North Carolina line, consists chiefly of lower silurian rocks, among which the limestones prevail, insuring a fertile soil. On the western borders of this valley the upper members of the Appalachian system of rocks are met with, sometimes, through the effect of great faults, abutting against the lower members of the group. Thus it happens that the coal formation appears in a few localities along the principal mountain range next west of the Blue ridge. (See ANTHRACITE.) Near these lines of fault are many mineral springs, some of which are celebrated for their medicinal effects. Among the most noted are the Sulphur springs and Dagger's spring in Rockbridge co., the Warm springs in Bath co., the Yellow springs in Montgomery, and the White Sulphur, Red Sulphur, and Sulphur springs in Monroe co.; beside which are numerous others in Augusta, Rockingham, Pendleton, Greenbrier, and other counties of this part of the state. The great valley of Virginia contains an abundance of hematite iron ore of excellent quality, which however is only worked in a few furnaces near the James and the Shenandoah rivers. The ores are adapted for making iron of a superior quality, especially when smelted with charcoal, of which an abundance of the best character is everywhere accessible. Lead ores occur in many localities in the silurian limestones, but are not worked to any extent except at the mine in the S. E. part of Wythe co. (See LEAD.) In Washington and Smyth cos. on the North branch of Holston river are deposits of gypsum and of salt of great extent, which are largely worked. (See SALT.) The western portion of Virginia is occupied entirely by the coal formation. In Hampshire co., bordering the western extremity of Maryland, are the furthest outliers in Virginia to the N. E. of the great bituminous coal field of the middle states. The formation is a continuation on the S. side of the Potomac of the semi-bituminous coal field of western Maryland, and contains over an area of no great extent the same strata of coal, &c., for which that district is celebrated. The eastern margin of the great coal field is W. of this, along the range of hills that form the western boundary of Randolph, Pocahontas, Greenbrier, and Mercer cos. Bituminous coal abounds in all the counties to the western border of the state. The strata are nearly horizontal, and the coal beds, some of which are of great thickness, are traced continuously for many miles along the banks of the rivers. Such is the case with the great bed, 14 feet thick at Wheeling, which is worked at many points along the Ohio river. The valley of the Kanawha abounds in coal beds, producing coal of a superior quality, some of it cannel. In this region are numerous salt works, and springs of rock oil have recently been discovered and worked to some extent. (See PETROLEUM.) Beside the mineral products already named, porcelain clay, fire clay, fine granite, soapstone, slate, and marble are found. The variegated marble of the Potomac, specimens of which have been used in the capitol at Washington, is unsurpassed in beauty.—Virginia abounds in natural curiosities of great interest. The natural bridge in Rockbridge co. is one of the most remarkable natural arches in the world. (See BRIDGE, NATURAL.) Weir's cave, in the N. E. corner of Augusta co., ranks among the stalactite caverns of the United States next to the Mammoth cave of Kentucky. (See CAVE.) Madison's cave, near it, about 300 feet in diameter, has two extensive basins of very clear water, and from the vaulted arches above depend great numbers of brilliant stalactites. The Blowing cave, near Millborough, between the Rockbridge and Bath Alum springs, during the hot weather emits a current of cold air with such force as to prostrate the weeds at the entrance; and during the winter a current of the cold air from without rushes into the cave. There is a flowing and ebbing spring near this cave, and there is also one in Brooks's Gap in Rockingham co., and another near the mouth of the North Holston in the S. W. part of the state, which Mr. Jefferson regarded as syphon fountains. "The Hawk's Nest," called also "Marshall's Pillar," on New river in Fayette co., an immense pillar of rock connected by a narrow passage way with the table land in the rear, has a perpendicular ascent on all sides save this passage of more than 1,000 feet to the valley and river below. Caudy's Castle and the Hanging Rocks are similar though less lofty rocky pinnacles. The "Tea Table," near the Capon springs and within 10 m. of Caudy's Castle, is a mass of rock about 4 feet in diameter and the same in height, from the top of which issues a clear stream of water flowing over the brim on all sides, and forming a beautiful natural fountain. The Ice mountain in Hampshire co., 26 m. N. W. of Winchester, rises about 500 feet above the North river, on the E. bank of which it is situated; its W. side is covered with loose stone, on removing which pure crystalline ice can always be found even in the hottest days in summer. At the base of the mountain is an intensely cold spring. The numerous mineral springs of the state are for the most part situated in valleys surrounded by exquisite natural scenery.—The climate of Virginia varies greatly in different districts, as might be expected from its diversified surface. In E. and S. E. Virginia the summers are hot, and, from the abundance of swampy lands, bilious remittent, intermittent, and typhoid fevers prevail. The region lying on and near Hampton roads is however healthful and agreeable at all seasons of the year. The peninsular district between the James and York rivers, and between the latter and the Potomac, is specially subject to miasmatic influences during the summer and early autumn months; in the winter it is more healthful. The valley of Virginia has a salubrious and delightful climate, the summer heats being tempered by the elevation and the cool mountain breezes, while it is sheltered from the intense cold of winter by the mountains which surround it. The mountainous district generally has a very agreeable climate in summer, but portions of it are very cold in winter. The region sloping toward the Ohio is hot in summer, and not so cold in winter as the mountain district.—The soil of the tide water region is a light sandy loam, capable, with proper care and manuring, of yielding large crops of fruit and esculent vegetables; but it has been to a great extent worn out by superficial cultivation without enriching it by manure, and many estates, once among the finest in the state, have been given up to dwarf pines and cedars. These lands can however be easily reclaimed; the free use of gypsum and marl, both found in great quantities in the state, is sufficient in 2 or 3 years to restore them to a condition of high productiveness. In the vicinity of the James, York, Rappahannock, and Potomac, large quantities of tobacco are raised. The valley possesses a rich soil, admirably adapted to the cultivation of cereals, and is in fact the granary of the state. Much of the mountainous region is as yet uncultivated, and some of it incapable of tillage; but the valleys between the parallel ridges are generally well watered, and yield liberal crops if properly tilled. Much of the western portion of the state is productive and adapted to grain or grazing, though the soil is not so deep as that of the Shenandoah valley. In 1860 there were in the state 11,435,954 acres of improved land, and 19,578,946 acres of unimproved land in farms; the cash value of the farms was $371,696,211, and of farming implements and machinery $9,381,008. In 1850 there were 78,013 farms and 10,360,135 acres of improved land. The number of horses in 1860 was 287,522; asses and mules, 41,014; milch cows, 230,627; working oxen, 97,862; other cattle, 615,696; sheep, 1,042,946; swine, 1,589,519. Value of live stock, $47,794,256; value of animals slaughtered, $11,488,441. The agricultural productions were: wheat, 13,129,180 bushels; rye, 944,024; Indian corn, 38,360,704; oats, 10,184,865; rice, 8,225 lbs.; tobacco, 123,967,757 lbs.; cotton, 12,727 bales; wool, 2,509,443 lbs.; peas and beans, 515,004 bushels; Irish potatoes, 2,292,118 bushels; sweet potatoes, 1,960,808; barley, 68,759; hops, 10,015 lbs.; flax, 487,330 lbs.; flaxseed, 30,673 bushels; silk cocoons, 225 lbs.; maple sugar, 937,643 lbs.; cane molasses, 50 gallons; sorghum molasses, 221,017; maple molasses, 100,139; beeswax, 94,861 lbs.; honey, 1,430,811 lbs.; buckwheat, 477,808 bushels; value of orchard products, $800,650; wine, 40,508 gallons; value of productions of market gardens, $589,411; butter, 13,461,712 lbs.; cheese, 280,792 lbs.; hay, 445,529 tons; clover seed, 36,961 bushels; grass seed, 53,063 bushels; hemp of all kinds, 12 tons; value of home-made manufactures, $1,575,585. The number of manufacturing establishments was 4,890; capital invested, $26,640,000; value of raw material used, $30,880,000; average number of hands employed, 36,590, of whom 33,050 were males and 3,540 females; value of annual products of manufactures, $51,300,000. Among these manufacturing establishments may be specified 13 cotton factories, employing a capital of $1,325,243, using 7,302,797 lbs. of raw cotton, valued with the other raw materials at $770,977, working 28,700 spindles and 524 looms, and employing 741 male and 952 female operators; the annual cost of labor was $262,440, and the annual product $1,063,611, a decrease from 1850 of $382,500; 69 woollen factories, with a capital of $476,380, consuming 1,329,738 lbs. of wool and 70,000 lbs. of cotton, the raw material costing $466,020, and employing 7,574 spindles, 121 looms, and 625 hands, of whom 517 were males and 108 females; the annual amount of wages was $144,636, and the value of the annual product $809,760, a decrease of about $17,000 from the production of 1850. Leather was produced in the state to the value of $1,218,700. In the manufacture of pig iron, 23,217 tons of ore were mined and 9,096 tons of iron produced, valued at $251,173; and of rolled iron, 7,108 tons were produced, valued at $609,310. Steam engines and machinery were produced of the value of $1,478,036; agricultural implements, $339,959; sawed and planed lumber, $2,540,000; flour, $15,210,000. The amount of coal mined was 382,000 tons, valued at $690,000; and 2,056,000 bushels of salt were produced, valued at $479,000. In 1810 the value of manufacturing products was $16,806,096; in 1840, $18,242,936; in 1850, $29,602,507; and in 1860, $51,300,000.—The commerce of Virginia, both foreign and domestic, is of considerable importance. In the year ending June 30, 1861, 27 vessels, of which 18 were steamers, were built in her ports, having an aggregate measurement of 3,297 tons. The arrivals and departures of vessels engaged in foreign commerce at each of her ports for the same year were as follows:

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[*] The returns for 1860 on this and other points are not yet (August, 1862) accessible.

ENTERED.

Ports.	American.		Foreign.		Aggregate.	
	Vessels.	Tons.	Vessels.	Tons.	Vessels.	Tons.
Richmond	19	4,600	12	1,837	31	6,437
Norfolk and Portsmouth	77	61,371	16	6,238	93	67,609
Petersburg	7	4,678	4	2,038	11	6,716
Alexandria	38	11,495	13	3,236	51	14,731
Total	141	82,144	45	13,349	186	95,493

CLEARED.

Ports.	American.		Foreign.		Aggregate.	
	Vessels.	Tons.	Vessels.	Tons.	Vessels.	Tons.
Richmond	51	20,711	18	6,661	69	27,372
Norfolk and Portsmouth	37	8,279	12	3,180	49	11,459
Petersburg	2	1,449	..	..	2	1,449
Alexandria	2	348	15	3,691	17	4,039
Total	92	30,787	45	13,532	137	44,319

The value of the foreign imports for the year ending June 30, 1861, was $791,907; exports, $3,760,624. As during a part of the year the ports of the state were substantially closed to foreign commerce, it was less in amount than in the year previous, when the exports were $5,858,024, and the imports $1,326,249. A large portion of the exports and imports of the state are shipped or received through the great commercial ports of Baltimore and New York. There are no accessible statistics of the coastwise commerce of the state, but it is known to be much larger than its foreign commerce, the products of the market gardens and orchards of the tidewater region, the oysters of the Chesapeake bay, and the pine timber of the eastern counties, as well as the tobacco and flour of the Shenandoah valley, being shipped from the ports of the state to the northern states, and dry goods, furniture, and other manufactured articles and groceries sent thence in return. In 1855 the oysters alone sent from the ports on or near the Chesapeake bay amounted to 14,400,000 bushels, valued at $4,800,000. There is also an active river commerce carried on by the towns on the Ohio river with Pittsburg, Cincinnati, Louisville, and St. Louis. According to returns nearest Jan. 1861, there were 66 banks and branch banks in the state, whose condition was as follows: Capital, $16,486,210; loans and discounts, $25,866,262; stocks, $3,685,135; real estate, $1,070,669; other investments, $340,791; due by other banks, $1,893,416; notes of other banks, $2,003,703; cash items, $32,939; specie, $3,017,359. Circulation, $19,817,148; deposits, $7,157,270; due to other banks, $1,310,068; other liabilities, $317,905. There are in Virginia 16 lines of railroad, including the Baltimore and Ohio, of which more than one half is within the state. The whole length of these lines now completed is 1,675 m. They are as follows: Baltimore and Ohio railroad, from Harper's Ferry to Cumberland, and from Cranberry Summit to Wheeling, and to Parkersburg, 287 m.; Winchester and Potomac railroad, 32; Alexandria and Orange, to Lynchburg, 170; Alexandria, Loudon, and Hampshire, 38; Manassas Gap railroad, 85; Virginia central, 195; Richmond, Fredericksburg, and Potomac, 122; Richmond and Petersburg, 22; Petersburg, with Gaston branch, 64; Richmond and York river, 24; Petersburg to City Point, 9; South Side railroad (Petersburg and Lynchburg), 123; Virginia and Tennessee, 204; Richmond and Danville, 140; Seaboard and Roanoke, 80; Petersburg and Norfolk, 80. The cost of the construction and equipment of these lines of railroad up to Jan. 1, 1862, was stated by the "Railway Journal" at $66,759,158. The "Journal" estimated the number of miles then completed at 1,729. The state is a stockholder in all the principal railroads of the state except the Baltimore and Ohio, and has issued its bonds to a large amount for their completion. It has also issued bonds for the improvement of slackwater navigation in the James river, and in the construction of a canal from Richmond through Lynchburg to Covington, a distance of 226½ m., which has been accomplished at an expense of between $11,000,000 and $12,000,000. The Dismal Swamp canal is also partly in the state. The total length of mail routes in the state in 1861 was 14,382 m., of which 1,472 m. was by railroad, 937 m. by steam navigation, 928 m. by coach, and 11,045 m. not specified. The state is traversed by several telegraph lines connecting the principal points.—In 1850 the state contained 2,386 churches, viz.: 650 Baptist, 16 Christian, 173 Episcopal, 108 Free, 15 Friends', 9 German Reformed, 1 Jewish, 50 Lutheran, 6 Mennonite, 1,025 Methodist, 8 Moravian, 241 Presbyterian, 17 Roman Catholic, 1 Swedenborgian, 8 Dunker, 52 Union, 1 Universalist, and 5 of minor sects. These churches afforded sittings for 858,086 persons, and the value of church property was $2,860,876. There were 12 colleges, with 73 instructors and 1,343 students, the annual income of which was returned as $159,790, and estimated at $162,574; 317 academies, with 547 teachers and 9,068 pupils, with a returned annual income of $234,372 and an estimated one of $351,000; and 2,930 public schools, with 2,997 teachers and 67,353 scholars, with an annual income returned at $314,625, and estimated at $341,279. The whole number returned as attending all these institutions was 77,764, while the number returned from families as attending school was 109,711. The number of persons over 20 years of age unable to read or write was 71,005 white and 11,515 free colored, or about ⅛ of all over that age. In 1860 there were 17 colleges and professional schools, viz.: William and Mary college, Williamsburg; Hampden Sidney, in Prince Edward co.; Washington, at Lexington; University of Virginia, at Charlottesville; Randolph Macon, at Boydtown; Emory and Henry, in Washington co.; Bethany, in Brooke co.; Richmond college; Virginia military institute, at Lexington; Episcopal theological school of Virginia, in Fairfax co.; Union theological seminary, in Prince Edward co.; Virginia Baptist seminary, at Richmond; the law school of the university of Virginia; the law school of William and Mary college; the medical school of the university of Virginia; the medical department of Hampden Sidney college; and the Winchester medical college. The state has no common school system. In 1858 there were 3,847 schools in 101 counties; number of poor children in 74 counties and 1 town, 56,743; poor children sent to school in 125 counties and 3 towns, 54,232; expended for tuition of poor children, including all their school expenses, in 131 counties and 3 towns, $160,530.42; average attendance of each poor child at school, 12 scholastic weeks; average cost per annum of each poor child sent to school, $2.96. The governor, treasurer, auditors, and registers are *ex officio* the board for the distribution of the income of the literary fund from which the payments for the education of poor children are made.—In 1860 there were 15 daily newspapers published in the state, having an aggregate circulation of 44,400 copies; 16 tri-weekly and semi-weekly, circulation 23,692; 103 weekly, circulation 189,300; 5 monthly, circulation 43,900; total number of publications, 139, with a total circulation of 301,622 copies. Of these, 9 were literary and miscellaneous, 117 political, and 13 religious. The following public institutions are supported wholly or in part by the state. The Virginia institution for the deaf and dumb and blind, at Staunton, opened in 1839, had in 1860 75 deaf and dumb and 42 blind pupils, and 9 instructors; and 130 deaf mutes and 125 blind had been educated there previous to that date. Its annual current expenses were $28,000, which were defrayed mainly by state appropriation. The buildings and grounds cost $75,000. The eastern Virginia insane asylum, at Williamsburg, was founded in 1773, and is by many years the oldest insane hospital in the United States. On Jan. 1, 1860, it had 257 patients; receipts for the year, $66,518; expenditures, $55,458. The western Virginia insane asylum was opened at Staunton in 1828, and on Jan. 1, 1860, had 389 patients. A third insane asylum is nearly completed at Weston, on the W. side of the West fork of the Monongahela river. The state penitentiary at Richmond is on the silent or Auburn plan. In 1859 it had 349 inmates, of whom 31 were of foreign birth and 92 colored. The state library at Richmond has a collection of 18,000 volumes. There were in the state in 1850, according to the census, 21 public libraries, having 32,595 volumes; 6 school, with 2,706 volumes; 11 Sunday school, with 1,975 volumes; 14 college, with 50,856 volumes (the number of volumes in the college libraries in 1860 was stated at over 120,000); and 2 church libraries, with 330 volumes; total, 54 libraries other than private, with 88,462 volumes.—The government of Virginia is based on the constitution of 1851. The executive authority is vested in a governor (salary $5,000), who is elected by the people for 4 years, and who is not eligible for two consecutive terms. The lieutenant-governor and the attorney-general (salary $1,500 and fees) are also elected by the people for 4 years. The other executive officers are the secretary, treasurer, auditor, second auditor, register of the land office, and superintendent of the penitentiary, all of whom are elected by the general assembly of the state for two years, and receive each a salary of $2,000 per annum; and the members of the board of public works, 3 in number, who are elected by the people for 6 years, one going out of office every 2 years. The house of delegates, the lower body of the legislature, consists of 152 members, elected biennially from single districts apportioned on the basis of the white population. The senate consists of 50 members elected for 4 years (one half every 2 years), from single districts apportioned on the basis of population and taxation combined. The sessions of the legislature are biennial; no session can last more than 90 days except by a vote of ⅗ of all the members, and in no case can it be extended more than 30 days. The pay of senators and delegates is $4 a day and mileage. A reapportionment takes place in 1865, and every 10 years thereafter. There are county, circuit, and district courts, and a supreme court of appeals. The county courts are held monthly in each county, by not fewer than 3 nor more than 5 justices, who are elected by the people in districts or precincts in each county, 4 justices being elected from each precinct for 4 years. For the purpose of circuit court jurisdiction the state is divided into 21 circuits, in each of which the people elect a judge for 8 years. Two circuit courts are held annually in each county by each judge. The 21 circuits form 10 districts, and these 10 districts form 5 sections; and the voters of each section elect a judge of the court of appeals. These 5 judges constitute the court of appeals, and any 3 of them may hold the court, which has jurisdiction, except in some specified cases, where the matter in controversy is not less than $500 in value. This court has 3 sessions annually in Richmond, of 5½ months in all, and one in Lewisburg, which may extend to 3 months. District courts are held once every year in each district, by the judges of the circuits constituting the section and the judge of the court of appeals for the section, any 3 of whom may hold the court. The court of appeals and the district courts appoint their officers, but in the circuit and county courts the officers of the court are elected by the people. Every white male citizen above 21 years of age, a resident of the state for 2 years, and of the city, town, and county in which he offers his vote for 12 months next preceding an election, is a qualified voter, excepting paupers, criminals, insane persons, and officers of the United States government temporarily stationed in the state. Votes are given *viva voce* and not by ballot. The state has a considerable debt, most of it, previous to 1861, incurred for the prosecution of internal improvements. The constitution adopted in 1851, and the act creating the sinking fund, rendered it necessary to divide the debt of the state into two parts; that created previous to Jan. 1, 1852, is called the "old debt," and that created since that time the "new debt." The sum of $838,028.68 is made an annual charge upon the state treasury to pay the interest of the old debt and to furnish the means of its redemption. The new debt sinking fund consists of a charge of 1 per cent. over the interest due on the state treasury, for the purpose of investment, which it is estimated will redeem the debt in 34 years from the time of its issue. The following was the condition of the debt on Oct. 1, 1860:

Old debt, outstanding Jan. 1, 1852	$10,709,995 30
New debt, created since Jan. 1, 1852	19,480,321 33
	$30,190.316 63
Of which the state has for investment	1,083,657 20
Actual outstanding debt, Oct. 1, 1859	$29,106,659 43
Add former and subsequent appropriations	8,520,000 00
Guaranteed bonds of James river and Kanawha canal	2,260,000 00
Guaranteed bonds of Chesapeake and Ohio canal	500,000 00
Total of all debts and liabilities	$40,386,659 43

On Oct. 1, 1860, the condition of the actual debt was as follows:

Amount of 5 and 6 per cent. registered debt	$18,758,641 63
Coupon bonds payable in New York	12,624,500 00
Sterling coupon bonds (5 per cent.), payable in London	1,865,000 00
Total	$33,248,141 63

The operations of the sinking fund for 1860 were:

Annual appropriation for old debt	$838,028 68
6 and 7 per cent. on new debt (part being 5's)	1,344,972 48
	$2,183,001 16
Deduct the interest to be paid to holders	1,782,164 66
Applicable for redemption and investment	$400,836 50

Of which $206,033.29 is for redemption of the old debt, and $194,803.21 for investment in a sinking fund to cancel the new debt.

The indebtment of the state by issue of bonds and treasury notes was increased in 1861 about $6,000,000, while much of its railroad and canal property was rendered unproductive. The funds and resources of the commonwealth to offset these liabilities, Oct. 1, 1859, were as follows:

Amount held by the commonwealth proper	$2,511,745 33
Amount held by the internal improvement fund	32,845,724 49
Total productive and unproductive	$35,357,469 82

The productive funds amounted to $10,057,540.06. The unproductive funds, consisting mostly of mortgages and stocks in improvements not completed, or if completed not remunerative, amounted to $25,299,929.76 at par value, but none of them probably could have been sold at par. The total receipts from all sources for the year ending Sept. 30, 1859, were $4,326,549.67, and the total disbursements $4,222,536.81, leaving an excess of receipts in the treasury of $104,012.86. The available capital of the literary fund at the same date was $1,833,420.17. The items of taxation and amount of taxes thereon were: lots improved and unimproved, $238,255; lands, $1,262,436; other property exclusive of slaves, $493,239. The rate of taxation on these items was .04 per cent. A capitation tax of 80 cents per head was imposed on 207,195 white males which produced $165,756; of $1 on 9,334 free negroes between 21 and 55 years, which yielded $9,334; and of $1.20 on 273,170 slaves of and over 12 years of age, which yielded $327,804. The fees of office were $5,594; income, $31,028; interest or profits, $56,430; dividends, $10,454; toll bridges and ferries, $3,575; collateral inheritance tax, $3,224; licenses, $509,647; total taxation, $3,120,922, of which it was estimated that $2,778,332 was applicable to the ordinary expenses of government. The assessed value of real estate in 1860 was $417,952,228, and of personal estate $239,069,108, giving a total of $657,021,336; while according to the 8th census (1860) the value of real and personal estate was $793,249,681.—Virginia was the first of the American colonies settled by the English. Jamestown, on the N. bank of James river, was founded May 13, 1607, by 105 colonists sent out by the London company, to whom James I. had granted South Virginia, as it was then called in distinction from the territory to the northward, named North Virginia. (See United States, vol. xv. p. 745). The colonists were mostly worthless adventurers; Wingfield, the president of the colony, proved dishonest; the company at home thought of nothing but discovering gold mines or finding a passage to the South sea; and the whole enterprise was only saved from a disastrous end by the courage, energy, and good sense of Capt. John Smith. (See Smith, John.) In 1609 the London company was reorganized, and received a grant of territory extending 200 m. N. and the same distance S. of Old Point Comfort, and westward to the Pacific. The governing council was superseded by a governor to be appointed by the company's council in England, and to have the sole superintendence of local affairs. The council in England was also empowered to make laws for the colony, which however were to be conformable, "as near as might be," to those of England. Under this new charter Lord Delaware was appointed governor, Sir Thomas Gates lieutenant-governor, Sir George Somers admiral, Christopher Newport vice-admiral, and Sir Thomas Dale high marshal, all for life. Nine vessels with 500 colonists, including 20 women and children, set sail at once. Gates, Somers, and Newport accompanied the fleet, but the governor was detained for some time in England by his private affairs. The three officers all embarked in the same vessel, and were cast ashore on one of the Bermudas; one of the other vessels was lost, but the remaining 7 arrived in safety in the James river. The old government was abrogated, but none of the officers of the new one having arrived, Smith retained the government, as the charter authorized him to do; but the new colonists, like the old, were mostly a profligate set of adventurers, whose whole study seemed to be to create disturbance. Smith was soon after severely wounded by an accident and obliged to return to England for surgical aid, and left a colony of 500 persons well supplied with arms, provisions, and goods for traffic with the Indians, and provided with a fort, church, storehouse, and 60 dwellings, and a good stock of domestic animals. After his departure the colonists gave themselves up to riot and idleness. The provisions on hand were wasted, the animals killed, their firearms traded with the natives, a large number of the colonists on a trading expedition for corn were waylaid and killed by the Indians, and a party of 30 seized a vessel belonging to the colony and sailed away as pirates. Six months after Smith's departure only 60 colonists remained, and these so feeble and destitute that they could not have lived 10 days longer. At this juncture Newport, Gates, and Somers, with 150 men, arrived from the Bermudas in vessels which they had built there. Finding the condition of things at Jamestown, they resolved to abandon Virginia and sail with the remnant of the colonists to Newfoundland to seek food and a passage home from the fishermen. As they descended the river, June 10, 1610, they met Lord Delaware, who with 3 ships had just arrived from England bringing supplies and colonists. He persuaded them to return to Jamestown, took measures for procuring supplies, established a trading post at Hampton at the entrance to James river, and punished the Indians for their barbarities toward the colonists by attacking and burning several of their villages. His health failing, he returned to England, leaving Capt. Percy as his deputy. He was soon superseded by Sir Thomas Dale, who arrived with 300 settlers and some cattle; and the latter, in Aug. 1611, by Sir Thomas Gates, who brought 350 more colonists. New settlements were commenced at Henrico, some distance above Jamestown, and at the junction of the Appomattox and the James, then called New Bermuda, now City Point. The laws made for the colony were harsh and strict, and occasioned much dissatisfaction. In 1616 Dale, who had resumed the government of the colony at the departure of Gates, returned to England, and soon after Capt. Argall was appointed deputy governor. He used his office so much to the distress of the colonists that Lord Delaware sailed from England to resume his duties, but died on his passage at the mouth of the bay which bears his name. George Yeardley was now appointed governor (1619) and knighted. Twelve hundred colonists were sent over during this year, among whom were 90 respectable young women, who were disposed of to the planters as wives at the cost of their passage, 100 lbs. of tobacco, worth at that time about $75. The culture of tobacco was already becoming profitable. Among the new colonists were 100 sent by the king's special order from the prisons, to be sold as servants to the planters. This was the first instance in which felons had been sent to a British colony, and despite the protests of the colonists they continued to be sent in increasing numbers to Virginia for 100 years. In 1619 a Dutch trading vessel brought to Jamestown 20 negroes, who were sold as slaves for life. The number did not much increase for the next 40 years, being limited to a few cargoes brought in by Dutch traders. More settlers arriving, new plantations were established on the York, James, and Potomac rivers, and on the eastern shore of the Chesapeake bay. An estate of 10,000 acres near the falls of James river, with a number of indentured tenants to cultivate it, was assigned by the company toward the endowment of a college for the education of Indians as well as colonists; and moneys contributed in England for the same object were invested in iron works. In 1622 occurred a bloody war between the colonists and the Indian tribes led by Opechancanough, the brother and successor of Powhatan. On the night of March 22, 350 persons were massacred, and in a brief period Indian murders, sickness, and famine reduced the number of colonists from 4,000 to 2,500. In 1624 the Virginia company was dissolved by writ of *quo warranto*, after expending £150,000 beyond its receipts from the colony, which was thenceforward under the direct charge of the crown, except during the period of the commonwealth, 1649-'60. Its condition at this time was not prosperous, tobacco being the only article of export which paid a profit. In 1630 a fort was built at Point Comfort, and salt works were established at Accomac, on the E. shore of Chesapeake bay. In 1632 the laws of the colony were revised and consolidated, and, though occasionally troubled by the Indians and by vicious and vagabond colonists, it seems to have maintained a fair share of prosperity for a number of years. "A Perfect Description of Virginia," published in London in 1649, gives the number of inhabitants at 15,000 English and 300 good negro servants. There were 20 churches, the livings of the ministers being worth an average of at least £100. About 30 ships came yearly to trade. There were 6 public brew houses, 4 windmills, and 5 water mills to grind corn. The live stock of the colony was reckoned at 20,000 cattle, 200 horses "of an excellent race," 50 asses, 3,000 sheep, and 5,000 goats, beside great numbers of swine and poultry. The reduction in the market price of tobacco, which had fallen to 3*d.* per pound, led to the enactment in 1639 of the first stop law attempted in America. Half the crop of tobacco of that year was to be burned, and the crops of the two succeeding years were to be kept still smaller; and creditors (since tobacco was the currency of the colony) were required to take 40 lbs. for the 100, and "during the stint" to be content with receiving ⅘ even of that amount. In 1641 Sir William Berkeley became governor, and being a stanch loyalist soon came into collision with the parliament. The colony remained firm in its adherence to the Stuarts till March, 1652, when an English fleet which had been sent to Barbados to reduce that island to submission visited the Chesapeake, and arranged terms of capitulation with the loyalists; and Berkeley's commission being declared void, Richard Bennet, a Puritan settler in Maryland, was elected governor. Virginia had since 1619 had a legislative body of her colonists, called the house of burgesses, which had exercised a considerable share of authority in the enactment of her laws; and this legislature, which even James I. had not deemed it best to modify or curtail in its powers, under the new *régime* acquired some additional powers, which were never afterward wholly wrested from them. On the restoration of Charles II. Sir William Berkeley returned and was elected governor. The right of suffrage, which had been almost universal during the protectorate, was limited by act of 1670 to freeholders and householders, not so much from the pressure of the royal authority as from the aristocratic views of the prominent planters. The code of the colony was again revised in 1662, and the church of England reëstablished, and severe laws were passed against "nonconformists, Quakers, and Anabaptists." Sir William Berkeley, in his replies to a series of questions submitted to him by the plantation committee of the privy council in 1671, gives a very distinct picture of the condition of the colony at that time. The population was estimated at "40,000, including 2,000 black slaves and 6,000 Christian servants, of whom about 1,500 were imported yearly, principally English." These were convicts and redemptioners (persons whose services were sold for a definite term to defray the cost of emigration), but mainly the former. The importation of negroes was very small since the exclusion of Dutch vessels by the navigation acts, not more than 2 or 3 ship loads having arrived in 7 years. The only exportable commodity was tobacco, to the quantity of 15,000 or 20,000 hogsheads of 350 lbs. each. The Indians were completely subdued, so that there was no fear of them. There were 48 parishes, and the ministers were well paid. "But," adds the governor, "I thank God there are no free schools nor printing, and I hope we shall not have these hundred years; for learning has brought disobedience and heresy and sects into the world, and printing has divulged them, and libels against the best government. God keep us from both." The rapacity of the courtiers of Charles II., upon two of whom, Arlington and Culpepper, he had bestowed a patent of the Virginia colony, and the heavy taxation encouraged for his own purposes by Sir William Berkeley, led to great discontent, which in 1676, on the occasion of a levy of fresh taxes to provide against a threatened attack from the Indians, culminated in what is known as "Bacon's rebellion." (See Bacon, Nathaniel.) Berkeley met with large pecuniary losses in this rebellion, and when it was fairly quelled he was so relentless in his vengeance on all who had participated in it as to bring down upon himself the royal displeasure. In the winter of 1677 he visited England to justify his conduct, but died there before having an interview with the king. Lord Culpepper was then governor for a time, and was followed by Lord Howard of Effingham, both rapacious and greedy. In 1689 the colonial government reluctantly proclaimed William and Mary. In 1705 the fifth colonial revision of the code took place. By it the slave was declared real estate, and thus, like the Russian serf, attached to the soil. This provision remained in force while Virginia continued a colony. In 1698 Williamsburg, founded and named in honor of William III., became the capital of the colony. In 1754 hostilities broke out with the French, who had built a line of military posts along the western slope of the Alleghanies and at the head waters of the Ohio; and in this war George Washington first entered the service of his country, commanding the colonial troops at the battle of Fort Necessity (1754), and being placed at the head of the Virginia forces after Braddock's defeat in 1755. The assertion by parliament in 1764 of the right to tax the colonies without their consent called forth an earnest petition, memorial, and remonstrance from the Virginia house of burgesses in December of that year; and the stamp, mutiny, and quartering acts passed by parliament in 1765 led to the adoption of resolutions denying the right of any foreign body to levy taxes upon the colony. In the first colonial congress, which met in New York, Oct. 7, 1765, Virginia was not represented, her legislature having adjourned before the issuing of the Massachusetts circular; but its action was approved at the next session of the legislature. The passing of Townshend's measures of indirect taxation by parliament produced a remonstrance on the part of the Virginia legislature, and a renewed assertion of their exclusive right of self-taxation, and of trial by a jury of the vicinage. The name of Thomas Jefferson appears for the first time in connection with these resolutions, which were passed May 16, 1769. Lord Botetourt, the royal governor, at once dissolved the assembly, but its members in their private capacity met and entered into a non-importation agreement, which was very generally signed by the merchants and planters of the colony. The commerce of Virginia with Great Britain was at this time larger than that of any other colony. In 1770 the exports of Virginia and Maryland to British ports amounted to $1,931,801, and the imports of these two colonies from Great Britain to $3,186,952. In March, 1773, the house of burgesses, under the zealous advocacy of Patrick Henry, Jefferson, and R. H. Lee, appointed a committee "to obtain the most clear and authentic intelligence of all such acts of the parliament or ministry as might affect the rights of the colonies;" and the same committee were authorized to open a correspondence and communication with the other colonies. On the passing of these resolutions Lord Dunmore, the newly appointed governor, dissolved the assembly. In the autumn of 1774 a conflict occurred between the Indians under Logan, Cornstalk, and other chiefs, and a Virginia force of about 1,200 men, at Point Pleasant, on the Ohio river. The Indians were defeated, but the Virginians had 60 or 70 killed and a large number wounded. The Virginia convention which met at Richmond, March 20, 1775, to appoint delegates to the new continental congress, took measures for enrolling companies of volunteers in each county. On April 21, Gov. Dunmore ordered the powder belonging to the province to be taken from the public store at Williamsburg and placed on board an armed vessel in the river. Learning this, Patrick Henry collected some companies of volunteers, marched upon Williamsburg, and compelled the king's receiver to give bills for the value of the powder taken away. On Nov. 23, Lord Dunmore with a British and tory force took possession of Norfolk. He was driven from it Dec. 3, but, in Jan. 1776, returned with a larger force and bombarded it. He continued a predatory warfare along the whole Virginia coast through the ensuing summer, but was finally driven southward. The declaration of independence was proposed in the continental congress by the Virginia delegates under instructions from the convention of the colony. In the summer of 1779 the British General Matthews made a descent upon the coast, destroyed Norfolk, took Portsmouth and Gosport, destroying the vessels of war building there, and burned or took 130 merchant vessels on the James and Elizabeth rivers. In Jan. 1781, Gen. Benedict Arnold captured and burned Richmond, then a village of 1,800 inhabitants; but being pressed by the militia under Gen. Steuben and some French frigates in the Chesapeake, he was forced to escape with a few prizes to Newport, R. I. In the spring and early summer of the same year Cornwallis and Phillips plundered the greater part of eastern Virginia, seizing and destroying property to the value of not less than $10,000,000. The surrender of Cornwallis at Yorktown, Oct. 19, 1781, virtually closed the war. Virginia had been the first to urge the organization of a confederacy of states; and when it became evident that this confederation was inadequate for the purposes of a national government, she was again the first to call a convention of the states, in Sept. 1786, to arrange for some additional compacts relative to a tariff, navigation, &c. This convention, delegates being in attendance only from 5 states, did not venture to take action, but recommended the call of a convention in the following May to consider the articles of confederation, and propose such changes therein as might render them adequate to the exigencies of the Union. The constitution framed by that convention was ratified by Virginia, June 25, 1788. There was a strong opposition to giving it her sanction, led by George Mason and sustained by Patrick Henry, and the vote was accompanied by a proposition for more than 20 alterations in the constitution. In 1784 Virginia had ceded to the United States her claims to lands N. W. of the Ohio, founded on the grant in the charter to the Virginia company in 1619, reserving to herself her lands S. of the Ohio, and bounty lands N. W. of that river for her revolutionary soldiers and those employed in the expedition for the conquest of Kaskaskia and Vincennes, and stipulating in her act of cession for indemnity for the expenses of that expedition, for the security of the French inhabitants of those settlements, and that the ceded lands should be erected into republican states not exceeding certain specified dimensions. For many years after the adoption of the federal constitution, Virginia maintained a predominant influence in the affairs of the nation; of the first 5 presidents, 4 were natives and residents of that state, and each of them was reëlected for a second term; and since that period 3 other natives of the state, one of them at the time of his incumbency a resident of it, have filled that high office.—At the time of the secession of the cotton states, at the close of 1860 and commencement of 1861, a majority of the people of Virginia were strongly attached to the Union, but they also sympathized with the seceding states. At an extra session the legislature called a state convention, the members of which were to be elected Feb. 4, 1861. A bill was passed Jan. 23, appropriating $1,000,000 for the defence of the state. The governor meantime sent several messages to the legislature, all of them exhibiting great hostility to the northern states, and 10 of the Virginia members of congress published an address to the people of the state denouncing the republican party in congress, and declaring that "it was vain to hope for any measures of conciliation and adjustment from congress which the people of Virginia could accept." The number of delegates elected to the state convention was 152, of whom the greater part were "conditional" union men, a few in favor of immediate secession, and about as many unconditional unionists. The convention met at Richmond, Feb. 13, and on March 10 the committee on federal relations submitted several reports. The majority report, composed of 14 resolutions, avowed the doctrine of state rights, condemned all interference with slavery as dangerous, asserted the right of secession, and defined the circumstances under which Virginia would be justified in exercising that right, viz., the failure to procure such guaranties from the northern states as she demanded, the adoption of a warlike policy by the general government, or the attempt to exact payment of duties from the seceded states, or to reënforce or recapture the forts. The majority resolutions were discussed and adopted as far as the 13th when the capture of Fort Sumter by the southern forces, and the consequent proclamation of the president calling for troops, led to the passing on April 17 of an ordinance of secession by a vote of 88 yeas to 55 nays. Twelve of those voting nay were not long after expelled from the convention. The people of the state had by a majority of 52,857 required that the action of the convention should be submitted to their decision, and a vote on the ordinance of secession was accordingly ordered to take place on the 4th Thursday of May. The state government, however, acted as if the ordinance had already been ratified by the people. The U. S. flags were removed, troops to the number of 10,000 were called out by the governor, and loans effected for their arming and equipment; and on April 25 the convention passed an act for the adoption of the constitution of the provisional government of the confederate states of America. In western Virginia, a public meeting was held at Clarksburg, Harrison co., April 23, at which delegates were appointed to meet other delegates from the N. W. counties at Wheeling, May 13, to determine what course to pursue. The state convention on April 29 appointed delegates to the confederate congress, and invited that congress to make Richmond the seat of government of the southern confederacy; an invitation which was accepted soon afterward. It also authorized the banks to suspend specie payments, established a navy for Virginia, provided for enlistments in the state army, and then adjourned to June 15. On May 13 delegates from 25 counties met at Wheeling, and adopted resolutions condemning the ordinance of secession, and providing for a convention to represent all the counties in the state favorable to the division thereof, to be held at Wheeling, provided the ordinance of secession was ratified against the vote of western Virginia. The popular vote was taken as provided in the ordinance, May 23, and is said to have resulted in a majority of 94,000 in favor of the secession ordinance. Eastern Virginia voted almost unanimously for it, while the western counties were as unanimous against it. The convention of western Virginia, representing about 40 counties, met at Wheeling on June 11, passed a declaration of independence from the action of the state convention, declared vacant the offices held by all state officers acting in hostility to the federal government, and took measures for the establishment of a provisional government. On July 2 the representatives of western Virginia met as a state legislature, and elected senators to the U. S. congress, passed a stay law, and appropriated $200,000 for carrying on the war and a like sum for the support of the new state government. The proposition for a division of the state was voted down in the senate, 20 to 17. Subsequently, however, the convention at an adjourned session passed an ordinance organizing the western counties into a new state to be called Kanawha. The counties which were embraced in this movement were Logan, Wyoming, Raleigh, Fayette, Nicholas, Webster, Randolph, Tucker, Preston, Monongalia, Marion, Taylor, Jackson, Roanoke, Calhoun, Wirt, Gilmer, Ritchie, Ohio, Brooke, Barbour, Upshur, Harrison, Lewis, Braxton, Clay, Kanawha, Boone, Wayne, Cabell, Putnam, Mason, Wood, Pleasants, Tyler, Doddridge, Wetzel, Marshall, and Hancock—39 in all, and having a population of 281,786. Provision was also made for the annexation to this new state of any adjacent counties which might desire it. The provisional legislature of the state of Virginia in session at Wheeling, composed for the most part of members from these counties, gave its sanction to the setting off of the new state, and on Oct. 24 the act was approved by the people of the 39 counties by an almost unanimous vote. The new state (its name having been changed to Western Virginia) applied for admission into the Union at the first regular session of the 37th congress, but the subject was postponed to Dec. 1862.—For an account of the military operations in Virginia in 1861-'2, see UNITED STATES.

VIRGINIA. See CLAUDIUS CRASSUS.

VIRGINIA, UNIVERSITY OF, an institution of learning, situated in Albemarle co., Va., 1½ m. W. from Charlottesville and 4 m. from Monticello, the residence and burial place of Thomas Jefferson. It is a state institution, its buildings having been erected and its professorships endowed by the state, and its board of control is appointed by the state legislature. Its origin, the plan of its buildings, and the peculiarities of its organization are due to Mr. Jefferson, who devoted to the perfection of its details the last years of his life. It was chartered by the Virginia legislature Jan. 25, 1819, and first opened for the admission of students March 25, 1825. The government of the university is committed to a rector and 9 visitors, who enact its laws, control its finances, appoint or remove its officers, and exercise a general supervision over its interests. The visitors are appointed every fourth year by the governor of the state, and they select the rector from their own number. The office of rector was first held by Mr. Jefferson, and after his death successively by James Madison, Chapman Johnson, and J. C. Cabell. The university is composed of 9 schools, viz.: 1, ancient languages, comprising the Latin, Greek, and Hebrew languages and literature, with ancient history; 2, modern languages, including French, Italian, Spanish, German, and Anglo-Saxon, and modern history, literature, and philology; 3, mathematics, pure and mixed; 4, natural philosophy, including also mineralogy and geology; 4, chemistry, pharmacy, and materia medica; 6, medicine, comprising medical jurisprudence, obstetrics, and the principles and practice of medicine; 7, comparative anatomy, physiology, and surgery; 8, moral philosophy, including also rhetoric, belles-lettres, ethics, mental philosophy, and political economy; 9, law, including the science of government and international law. The school of law has two professors, the other schools each one. In the school of ancient languages, the professor is aided by two assistant instructors, and the professors of modern languages and mathematics have each one assistant. In the medical department there is an additional lecturer on anatomy and on materia medica, and a demonstrator of anatomy. The laws of the university are administered by the faculty, who are appointed by the board of visitors. The chairman of the faculty is selected by the board annually from the faculty. His duty is confined to a general supervision of the execution of the laws, but he has no authority over the several schools. He receives an annual compensation of $500 in addition to his income as professor. S. Maupin, M.D., was chairman of the faculty in 1860. The income of the university is derived from a state annuity of $15,000 (subject to a charge of about $4,500 for the support of 32 state pupils, who receive tuition, board, and room rent free), matriculation fees, rents of dormitories and hotels, and surplus fees of tuition in the several schools. Each professor has a fixed salary of $1,000 per annum from the university, and tuition fees from each student who attends his lectures of $25 per year, until he attains the maximum of $2,000. Most of the schools are divided into junior and senior classes, and two courses of lectures on each subject given annually. In the schools of law and mathematics there is in addition an intermediate class, and in the latter also a class of mixed mathematics. The lectures to each class occupy an entire session of 9 months. A student, except in the school of law, may attend all the classes of the school during the same session, without paying an additional fee, so as to receive the entire instruction of that school if he is able in one year. Two public examinations of all the members of each school are held in the course of the session. Students may attend such schools as they choose, but, unless in extraordinary cases, they must attend 3 schools. Law students, however, are required to attend only the school of their own profession. There are no holidays during the session except Christmas day, and lectures are delivered 6 days in the week. In conferring degrees, the time of residence of the student at the university is not taken into the account. Each school confers degrees for scholarship in its own studies, and the examinations for degrees are very strict. The degree of bachelor of arts is conferred on students who have obtained degrees in any two of the literary schools (viz., ancient languages, modern languages, and moral philosophy), and in any two of the scientific schools (viz., mathematics, natural philosophy, and chemistry), have given evidence of a certain degree of proficiency in the studies of the remaining two academical schools, and have furnished an essay or oration approved by the faculty. The degree of master of arts is conferred only on those students who have received degrees in all of the 6 academical schools, have passed a satisfactory review upon all the studies of the course, except those in which they have received degrees during the current session, and have furnished an essay or oration for the approval of the faculty. The university never confers honorary degrees. The number who attain the master's degree in any given year is small. In the session of 1854–'5, out of 350 exclusively academical students, but 7 received that degree. The number of students in attendance is usually from 500 to 600. In 1859–'60 the number was 625, of whom 417 were academical and 208 professional. There is no theological school. A chaplain, chosen in rotation from the prevailing religious denominations of the state every two years, and supported by the voluntary contributions of the professors, students, and other residents, officiates daily. Attendance upon the religious services is not compulsory. The library of the college in 1860 numbered 30,000 volumes.

VIRIATHUS, a Lusitanian warrior, assassinated in 140 B. C. The Lusitanians, who, favored by their mountain fastnesses, were accustomed to subsist by predatory incursions into the Spanish plains, had carried on hostilities against the Romans since 153 B. C., and in 151 inflicted much loss on a Roman army under the prætor Servius Sulpicius Galba. In the following year their country was invaded in great force, and the people in alarm submitted to Galba, who by the offer of land induced many of them to migrate with their families into the level country. Having assembled these in 3 large bodies under pretence of assigning them their allotments, he caused them to be indiscriminately slaughtered by his troops. Among the few who escaped was Viriathus, who had been a leader of his people in their raids, and whose personal character is very favorably drawn by Dion Cassius. The Lusitanians who had remained at home unanimously rose against the Romans, and, at first avoiding battle in the plains, carried on a vigorous guerilla conflict in their mountains. In 147, when a considerable body of them, after ravaging Turdetania, were shut up and besieged in a fortress by the proprætor Vetilius, and about to capitulate on the strength of new promises, Viriathus remonstrated, reminding them of the treachery of Galba, was chosen their general, skilfully extricated them, and, drawing Vetilius into an ambuscade, slew him and nearly half his army of 10,000 men. In the 3 following years he ravaged the Roman territories, and successively defeated the prætors Caius Plautius and Claudius Unimanus, and the legate of the consul Q. Fabius Æmilianus, but in 144 was routed by the latter, and again in 143 by the proprætor Q. Pompeius, whom however he shortly afterward signally vanquished. In 142 the consul Q. Fabius Servilianus gained great advantages over him, and took many of his cities, but was finally surrounded in a mountain pass and captured with his entire army by Viriathus. The latter treated the Romans leniently, and released them unharmed on the conclusion of a treaty by which the Lusitanians were guaranteed the peaceable possession of their own country and were recognized as allies of Rome. This treaty, however, was broken the next year, with the connivance of the Roman senate, by the consul Q. Servilius Cæpio, who invaded Lusitania, and bribed 3 envoys of Viriathus, sent to negotiate for peace, to murder him. The Lusitanians, under a new leader, were finally subjugated to the Roman rule before the close of the same year.

VISCACHA. See Chinchilla.

VISCONTI (Lat. *vice-comites*, viscounts), the name of a Lombard family which ruled for several generations in Milan. The first one of whom any thing definite is known was a certain Eriprando, who is mentioned in connection with the affairs of the Milanese and the emperor Conrad II. in 1037. His descendants began to occupy a conspicuous place among the feudal nobility of those times, and held estates of considerable size on the lake of Como and the Lago Maggiore. The greatness of the house was due, however, to Ottone, who was nominated archbishop of Milan in 1262 by Pope Urban IV., but was unable to gain possession of his see until 1277, as the popular favor was accorded to the family of Della Torre, with whom the Visconti carried on a long and bitter war, ending in the destruction of the former. In 1302 the Torriani reëntered the city, at which time Matteo, nephew of the archbishop Ottone, exercised the temporal power. In 1312 the emperor Henry VII. of the house of Luxemburg marched into Italy, when the Torriani were again expelled from Milan, and Matteo resumed his sovereignty, being appointed imperial vicar. He afterward extended his authority over Piacenza, Pavia, Alessandria, Tortona, Cremona, Bergamo, Lodi, and other towns. Later in life he was involved in a controversy with Pope John XXII. on account of his refusal to acknowledge Robert, king of Naples, as imperial vicar of Lombardy, to which office he had been appointed by the pontiff. The papal inquisitors met at Valenza in 1322, and on 25 distinct charges condemned him as a heretic, degraded him from all honors and offices, stigmatized him as perpetually infamous, declared his property confiscated, and excluded his children and grandchildren from all positions of honor and trust. Three months after this Matteo died, leaving the sovereignty to his son Galeazzo, who, aided by the emperor Louis the Bavarian, maintained a war with the pope, which was finally successful; but having quarrelled with the emperor, he was confined 8 months in the castle of Monza. He was freed in 1328, and died soon after in exile. He was succeeded by his son Azzo Visconti, who labored to improve the condition of his subjects, and under him Milan flourished. Dying in 1339, he was succeeded by his uncle Luchino, an able but unscrupulous man, who made himself master of the greater part of Lombardy and Montferrat, and was distinguished for the encouragement he gave to the cultivation of the arts and sciences. He was succeeded upon his death in 1349 by Giovanni Visconti, who added Genoa to his possessions. It was during his reign that Petrarch visited Milan. Giovanni died in 1354, leaving the government to his 3 nephews, Matteo II., Barnabo, and Galeazzo. The first soon died; and the two remaining brothers, though brave and highly successful in war, rendered themselves hateful by their cruelty. Barnabo carried on a long war against the popes, but in 1385 was taken prisoner by his nephew Giam Galeazzo, who thus became lord of Milan and its 21 dependencies. Under him the Visconti family reached its highest prosperity and glory. He aspired to the rule of all Italy, and expelled the Della Scalas from Verona and Vicenza, and the Carraras from Padua. The only cities that opposed his progress were Florence and Venice. In 1395 he received from the emperor Wenceslas a diploma constituting him duke of Milan, and by the terms of it ceded to him the towns he had conquered; and when Ruprecht, count palatine, the successor of Wenceslas, marched into Italy with the intention of wresting these possessions from Giam Galeazzo, and restoring them to the empire, the former was forced to retire across the Alps. During the siege of Florence, the result of which he only awaited to declare himself king of Italy, he was carried off by the plague in 1402. He was a munificent patron of the arts, and many of the most celebrated men of the time were attracted to his court. Among the great architectural works undertaken during his reign were the cathedral of Milan, and the Certosa and the Ticino bridge at Pavia. At the time of his death his children were all minors. The eldest, Giovanni Maria, became duke, but was stripped in large measure of the vast possessions of his father; and having by his cruelty and pusillanimity made himself an object of hatred, he was assassinated in 1412. He was succeeded by his brother Filippo Maria, whose reign of 35 years was one constant series of wars, chiefly against the Venetians. In his time the great leaders of the condottieri, Piccinino, Carmagnola, and Francesco Sforza, flourished. Filippo died in 1447 at Milan, without male heirs, and Francesco Sforza, who had married his natural daughter Bianca, became in 1450 master of Milan. With Filippo the dynasty of the Visconti passed away, after having ruled for many years over the greatest Italian principalities of the middle ages. Collateral branches still exist in Lombardy; but the Visconti of Rome have another origin.

VISCONTI. I. Ennio Quirino, an Italian archæologist, born in Rome, Nov. 1, 1751, died Feb. 7, 1818. He belonged to the Roman family of the Visconti, and was the son of Giambattista Antonio Visconti, who was prefect of antiquities at Rome under Clement XIII., Clement XIV., and Pius VI. He was instructed by his father, and at the age of 14 translated the "Hecuba" of Euripides into Latin verse; the version was printed in 1765. He studied law, received his degree in 1771, and was made a chamberlain of the papal household and an under librarian of the Vatican; but as he was unwilling to become a priest, he was removed from his position. He assisted his father in editing the first volume of the *Museo Pio-Clementino* (Rome, 1782), and edited the second volume alone after his father's death. He was now made conservator of the Capitoline museum, and superintended the remaining 5 volumes of the museum of the Vatican collection, the last of which appeared in 1807. This work made him famous throughout Europe. In the mean time he published on the discovery of the tomb of the Scipios a dissertation entitled *Monumenti degli Scipioni;* in 1798 a dissertation entitled *Monumenti scritti del museo del signor Tommaso Jenkins;* and numerous other treatises on ancient monuments discovered in various places. When the French entered Rome in 1798, Visconti, who had favored the revolutionary movement, was made a member of the provisional government, and subsequently one of the 5 consuls under the republican constitution. In 1799, on the entrance of the Neapolitan army, he removed to France, where he was appointed overseer of the collections of the Louvre and professor of archæology. He was charged with the superintendence of the department of antiques in the museum of the Louvre, and made out a catalogue, the last edition of which under his care appeared in 1817, entitled *Description des antiques du musée royal.* This was followed by his great work, for which Napoleon furnished the suggestion and the means, the *Iconographie Grecque* (3 vols. folio, 1808), and the *Iconographie Romaine* (4 vols., 1818–'24), consisting of authentic portraits of distinguished Greeks and Romans. In 1817 he went to England to testify to the value of the Elgin marbles, and on his return to France published his *Mémoire sur les ouvrages de sculpture du Parthénon*, &c. (Paris, 1818). During all this time he wrote innumerable treatises upon particular objects of ancient art. Labus began in 1818 at Milan an edition of his complete works; but it was never finished. II. Filippo Aurelio, brother of the preceding, died in Rome in 1831. In 1792 he succeeded his father as superintendent of antiquities; and from 1809 to 1814, during which time the French occupied Rome, he was president of the commission of antiquities and fine arts, and was also one of the deputies charged with the preservation of the churches of the city. In 1816 he was made secretary of the commission of the fine arts, and edited the *Museo Chiaramonti*, a continuation of the *Museo Pio-Clementino.* He also wrote a number of treatises on the works of ancient art found in the Roman territory. III. Louis Joachim Tullius, a French architect, son of Ennio Quirino, born in Rome, Feb. 11, 1791, died Dec. 1, 1853. When 8 years old he went with his father to Paris, was placed under the instruction of the architects Percier and Fontaine, and at the age of 17 entered the school of fine arts. In 1817 he was appointed superintendent of the construction of the wine market, and in 1825 architect of the royal library, for which he designed 29 plans for the purpose of making it of a character suitable to the grandeur of its contents, but was unable to accomplish what he wished. He adorned Paris with some of its finest fountains, designed the monuments of several of the marshals, and furnished the plan of the mausoleum in the Invalides in which the remains of the emperor Napoleon were placed. Louis Napoleon confided to him the work of completing the Louvre and the Tuileries. The task was begun in July, 1852, and completed after his death by Lefuel.

VISCOUNT (Lat. *vice-comes*), a dignity in the British peerage, which ranks next below that of earl. The application of the title as a dignity dates from the time of Henry VI., though as a title of office it is much older. Anciently a *vice-comes* was the deputy of a count or earl, under whom he performed duties similar to that of a sheriff.

VISHNU. See Brahma, vol. iii. p. 620.

VISIGOTHS. See Goths.

VISION (Lat. *visio*, from *video*, to see), a term employed to denote, in different relations, the power, the act or process, or the object of sight. The behavior of rays of light reflected, or transmitted through various media, among which are the lens and humors of the eye, and the manner in which images come to be formed at the retina, are considered under Optics. For the parts of the eye, the action of the humors and iris, and the adjustment to distance by which near or distant objects are seen distinctly, see Eye.—The mere action of rays of light upon that expansion of nervous matter constituting the retina, is not sufficient to secure the actual perception of the objects they proceed from. Of the other conditions necessary, it is, speaking in a general way, an indispensable one that the divergent pencils of rays emanating from as many points of the object as can be seen at the same instant, shall be brought each to its proper focus at or within the retina. But a small portion, however, of a surface in any considerable degree extended is seen at any instant. As the eye plays over such surface, successive groups of pencils have their foci thus formed; and the image, which is a real one, is thus, in space and time combined, a perfect but extremely diminished counterpart of the object observed. The almost inappreciable color of a layer of nervous matter so thin as the retina, exerts no sensible influence in checking the entrance of the rays; so that the common impression, that the retina is a screen receiving the image on its surface, is incorrect; the image is really formed in the space occupied by the transparent retina itself. Hence it has three dimensions, like the bodies or field of view it represents, though its depth is very slight; and it is possible that its place in reference to depth within the membrane can vary within certain minute limits, still allowing of true vision. But if the object be so near the eye, say within 8 or at least about 7 inches, that the convergent power of the lens fails to bring the pencils of light to foci, or owing to flatness of the eye the same result occurs, or if the pencils from very distant objects or in eyes too powerfully convergent are focalized and again spread before reaching the retina, no distinct perception takes place, but only a sense of light or brightness in greater or less degree. The least distance to which objects can ordinarily be distinctly seen, is termed the limit of distinct vision; it is for different eyes between 6 and 12 inches. At such distance, and still more at those more remote, the several pencils admitted by the small opening of the pupil, about $\frac{1}{10}$ of an inch in diameter for an object at 6 inches, may be regarded as consisting each of nearly parallel rays. For an object at 10 inches, the angular divergence of each pencil is little over half a degree; and generally, it may be stated that distinct vision is due to bodies of rays very slightly divergent or sensibly parallel. Hence, the object brought much nearer the eye is still distinctly visible through a pin hole, the edges of which cut off the too divergent rays; or through a lens sufficiently convex to complement, in converging the pencils, the effect of the eye. Thus, for distinct vision, the image must be in the retina, and distinctly formed there. Again, since there are degrees of faint illumination not allowing of sight, it must be sufficiently bright or intense. Thus, in cases of cataract or opacities of the organ, distinct vision gradually becomes impossible, except by the stronger degrees of brightness of the objects. Many stars are wholly unperceived until the light emitted by each of them has been collected and concentrated from over a larger space than that afforded by the pupil, as by use of a large convex lens. But excessive brilliancy dazzles the eye, the impression not resulting in perception of the object, but often in pain, or in positive and lasting injury to the structure and sensibility of the retina. The image must have a sensible magnitude. When a single shoot of young corn at a distance is quite invisible, the several shoots of like size in a hill, impressing a larger space on the retina, may come clearly into view; but the rows are, on the same principle, more distinctly seen than the single hill could be. Ehrenberg finds that the smallest square magnitude visible near at hand to the naked eye, white on a black ground, or the reverse, is about $\frac{1}{405}$ of an inch. With effort, a less spot may be seen; and if, like gold leaf, the particle reflects light powerfully, it may be seen down to a fineness of $\frac{1}{1125}$ of an inch. On the principle of extension already referred to, lines of much greater fineness are visible—if opaque, and viewed toward the light, down to the $\frac{1}{4900}$ of an inch diameter, or about half the thickness of the silkworm's fibre. The magnitude and extreme limit of distance of visibility of an object vary also with its brightness, and hence with its color. A white object in sunlight is seen at a distance of 17,250 times its diameter; in the same light, a red object of like size only about one half as far; a blue object, at somewhat less distance than a red one. But all small or distant objects become more readily visible when the background or surrounding objects present to it the strongest contrast—black to white, green to red, &c. It should be added that certain physiologists consider vision as taking place only by agency of rays, luminous or heating, thrown back into the retina from the choroid coat behind it, maintaining that on the latter the light must first impinge; and various speculations have been entertained in respect to the part played in vision by the calorific and the actinic rays, none of which however seem yet to have led to positive and trustworthy results. Though the human eye is capable of seeing objects both at great and at small distances, yet most persons, wishing minutely to examine an object, place it at about 8 to 10 inches before the eyes. But one whose eyes from any cause, as flatness of the cornea, lack convergent power, must remove the object further away to obtain distinct vision, and such a one, seeing remote objects most clearly, is said to be long-sighted; this condition is *presbyopia*, and is remedied by use of convex eye glasses. On the other hand, when the eye is too convex, or from any cause too rapid convergence takes place, the object must be brought close to the eye, so as to carry its image back to the retina, and one thus affected is said to be near-sighted; this condition is *myopia*, and is remedied by concave eye glasses. As a rule, myopia appears if at all in early life, and the tendency is to presbyopia with advancing age. It is a valuable rule, in the selection of spectacles to remedy either of these difficulties, not to over-compensate the deficiency of the visual organs, but rather the reverse. In the former case, we favor and hurry on, in the latter we retard, the unfavorable change in the organs. It is related of John Quincy Adams, that he preserved the proper focalizing power and ordinary use of his eyes to old age, escaping the need of glasses; and that he credited this result to a habit of frequently pressing the eyeballs gently but firmly from the outer angles forward, by use of the thumb and middle finger of one hand.—Like any other lens, the crystalline has its optic centre; this coincides nearly with its centre of form. The direction of every ray passing through this is nearly the same after as before transmission. Consequently, every such ray is an axis (and a secondary one, save in case of the single ray that lies in the principal axis of the eye itself) of a pencil of rays from some point of the object. The pencil of rays coming from the point directly before the eye, has its axis corresponding with the principal or "optic axis" of the eye, passing through very nearly the centres of the pupil and lens, and meeting the retina in a direction perpendicular to its surface, at the middle point of the small circular area that is the seat of most distinct vision. It has been much insisted on, as the law of visual direction, that we see every visible object or point in a direction the reverse of that in which the axis or middle ray of its pencil meets the retina; *i. e.*, perpendicularly always to the point of the retina affected. The supposition is as if the mind traced back the line of the axis of each focalized pencil (its true direction), and inferred the presence of the object somewhere in that line prolonged. A more tenable supposition is, that having once learned by aid of touch and through repeated experience where the object or point is to which the eye is strictly directed, namely, in a line exactly in front of or perpendicular to the middle retinal point then affected, we come to know automatically in all cases what object is in this line; and since, without the eye, we also perceive more or less distinctly at the same time many other objects or points, we judge of the relative places of these also by experience of their positions (relatively to the optic axis) on the retina, combined with our experience in like cases, through touch and movement, of their positions relatively to each other in the visual field. For example, objects to the right of us and of the principal axis of the eye form their image in the eye to the left of that axis; but experience shows the infant that to find those objects it must move its hand or body to the right; and it readily comes to regard an object which it can only see directly in front by turning the eye to the right, as being really in that direction. So objects above the place of the optic axis form their image below it on the retina; but experience finds these objects only above; and the turning of the eye upward to see them directly thus becomes the sign of their true position. According to this view, the mind takes no cognizance of directions of rays coming to the retina; but rather, it sees the whole field before it always as one large and greatly diversified expanse or object; and it judges of the positions of the parts of this by the relations experience has shown them to bear to the axis of vision. And since the several secondary axes of the pencils of light must cross each other, and the image be inverted upon the retina, both in respect to up and down, and to right and left, the conclusions above reached readily explain to us why the objects or field thus impressing the retina in positions doubly inverted, still always and intuitively reveal to us the true or actual positions of the objects as they exist without. Experience forbids us to see objects inverted, because it has made their inverted images the signs of their erect and true positions. The reason why, with two eyes, we see objects single, is founded on similar principles. The small object or point at any instant most clearly seen, is that in the axis of each eye. Each eye is directed to one point, each sees a thing in one place; and if, like those of some insects, human eyes were multiple, say 100 retinas receiving the image at once, they should still all report but one object, if seeing it in directions fixing it in one place. The parts or objects lying somewhat remote from the axis of vision at any moment, however (as we may determine by practice in fixing the eyes steadily on a point, and then attending to our indistinct vision of objects in the edges of the field), are not made to coalesce in one; they are seen double. But through experience and habit we have learned to disregard these feebler and discrepant impressions, and to infer singleness of all objects noticed, when their impressions on the two retinas correspond within certain limits. In strabismus, the dissimilarity of the two images has become total, and objects are seen double; or the subject acquires the ability to attend to the impressions of either eye singly. But though two normal eyes cannot multiply objects, they see them with twice the brightness afforded by the use of one alone. It is a singular circumstance that the seat of most distinct vision on the retina is the very position in which the membrane is thinnest. Besides, this portion is slightly elevated, a minute convexity or papilla appearing upon the generally concave retina. At the very centre of this is discovered a small spot, $\frac{1}{35}$ of an inch in diameter, so transparent as to have been named the *foramen* (hole), and around this the *limbus luteus* (yellow border), total diameter about $\frac{1}{8}$ of an inch. Though it is within this area that visual perception can be most distinct, yet a faint light affects the eye more readily when the vision is slightly indirect, showing that the portion near and about the centre of the retina is the more impressible. A feeble star or other faintly luminous object is better seen when the eyes are directed to a point near than when upon it, and better still by moving the eyes about over the space not far from it. The spot at which the optic nerve enters the eye is entirely destitute of sensibility; it is hence known as the *punctum cæcum*. An image falling on this is invisible; on shutting the right eye and directing the left about 15° to the right of any small object, this entirely disappears; on turning the eye still further, it is again seen. A period of time, though very small, is consumed in bringing the effect of any luminous impression upon the retina to its maximum; the time may be so brief that no impression can occur, save when, as in the case of an electric spark, the light is extremely intense. A cannon ball changes its place too rapidly to be seen, except when going nearly in the direction toward or from the eye. On the other hand, motions of less than one minute of arc per second are not appreciable, as that of the hour hand of a clock, or of the heavenly bodies. The apparent motions of the latter become very obvious, however, when we observe them very near to the edge of some fixed opaque body, as a building or tree. But the impression, once made within the nerve substance, not only spreads laterally in space, so that bright and white objects tend to appear broader, and dull or black ones surrounded by bright smaller, than they really are, but also extends or endures in time after the total cessation of action of the light. The duration of ordinarily strong impressions, *per se*, on the retina, has been calculated at about $\frac{1}{8}$ to $\frac{1}{10}$ of a second. If within this time an object or light is removed and restored, the vision of it continues uninterrupted. It is in this way that, in winking, positive darkness or black does not take the place of the light or of the view observed at the time; there is a momentary and partial obscuration which from habit we disregard. So, a bright coal whirled in a circle about 9 times per second, shows a complete circle of light; and the apparent length of the traces of meteors seen at any moment is in part owing to this cause. Advantage is taken of this principle in the construction of many amusing toys: the thaumatrope, in which parts of a picture painted on opposite sides of a card are made to the eye to appear united in one when the card is rapidly turned over, as by the untwisting of strings in its sides; the phantasmascope, in which an object, painted in several attitudes, near the rim of a circular disk of card paper turning as a wheel, and then viewed through a small opening while the disk rapidly turns, appears to go through evolutions corresponding with the various positions; and others. For the changes occurring in the impression left by intense light or colors on the retina, and the subjects of complementary and subjective color generally, see Color.—The angle formed at either eye by the rays coming from opposite extremities of the part of an object visible from one place, is called the visual angle for that object. It is evident that a given object, its distance being doubled, subtends at the eye a visual angle only half as great as before, the image on the retina being reduced in like ratio; and like results hold true generally. Hence, the apparent linear magnitude of any given object, as determined by this cause alone, is directly as the visual angle, or inversely as the distance from the eyes. The apparent superficial magnitude is, therefore, inversely as the square of this distance. As an example, calculations have shown that the distance of the sun from the earth is about 400 times that of the moon, but that, at the same time, the diameter of the sun is the greater in almost exactly the same ratio; and in mid heaven these two bodies have apparently nearly the same size. Again, small objects viewed nearer the eye than we are in the habit of seeing them, appear larger than usual. Now, the light from any point of an illuminated surface decreasing directly as the square of the distance, and the points of the given surface becoming, as it were, packed closer together by its apparent diminution in the same ratio, it follows that the latter effect balances the former; and the apparent brightness of an object is thus the same (save some loss by aërial perspective, or effect of interposed air) at all distances. The visual angle, it will be noted, is formed at either eye, and has its base, always at the object, vertical, horizontal, or oblique. But when the two eyes are directed upon the same visible point, or so directed that their axes must meet at a point at some distance in front of the observer, the angle which these form in meeting is that known as the optic angle, or the binocular parallax. This angle, it must be noted, has its base at the eyes of the observer, and in length invariably equal, for each person, to the distance between the centres of the pupils of the two eyes (average, about 2½ inches); and this base is, of course, usually horizontal.—Vision, under nearly or quite all the conditions thus far considered, involves the use of one eye only, and may be distinguished as monocular; but there are certain perceptions and results that are to be secured only through coöperation of the two eyes, and the study of the latter constitutes the important subject of binocular vision. Looking with both eyes at any small object not too distant, say a pencil held at arm's length, it is seen in a certain place; on closing the right eye, the object seems simultaneously to have been removed a little toward the same side; while on opening the right and closing the left eye, it removes twice as far toward the left side. Thus, the perception of an object by the two eyes at once is one in which the impressions upon the eyes are in a manner made to give the same mental result as if they had coalesced into one visual image; its place always, and its appearance usually, being different from those given by either eye singly. It has been already shown that this coalescence is within certain limits only; that it is not complete over the whole possible field of view; and that in our ordinary, undisturbed vision of bodies, much of the perfection of the result is due to a habit of neglecting what is not essential in the impressions, and something to inferences where certain parts are wanting or contradictory. Prof. W. B. Rogers details in the "American Journal of Science" for 1855–'6, and Nov. 1860, many experiments made by him in regard to different aspects of this subject; and from those named under the last date he draws the following conclusions: 1, the retinal impression of an object presented directly to either eye is accompanied by the feeling of a united visual act, and of itself gives no indication of the particular eye impressed; 2, the reference of the impression to one eye rather than the other is the result of collateral suggestion, which may either locate the image in the eye that actually receives it, or may transpose it seemingly to the other, according to the particular conditions of the observation. If we hold in each hand a pencil, erect, before the eyes, say at distances of 8 and 16 inches, on looking at the nearer one, it is seen single, but the further one appears double, one image showing on each side of the near pencil. Fixing the eyes on the further, the result is similar, save that it is now the further pencil that is single, the nearer double. The results seem to show that there are points in the two retinas that may be regarded as, at least under certain conditions, corresponding or identical. The retinal points of the two eyes seem to be so related, when the eyes are converged to the remoter object, that other objects at the like distance shall also have their rays, to right or left of the axis of each eye, falling on corresponding points, and hence be seen as one. But at the same time objects more near or more distant have their rays falling on points of the two retinas that have not become habituated to act in correspondence, and the effect is that such are seen double. The *diplopia*, or double vision, of persons intoxicated or when about falling asleep, is explained by the loss of control over the muscular movements arising in such cases, and the consequent inability to direct both eyes steadily upon the same object. The theory of corresponding retinal points, advocated by Brewster and others, has been questioned by Wheatstone, who instances the fact of the impossibility that the same points of a moderately sized body at the least distance of distinct vision could impress throughout like points on the retinas. Brücke appeared to have solved this difficulty by bringing in the hypothesis that the eyes are not at rest while regarding any large object or field, but continually making small movements, so that all parts of the object are successively caught upon corresponding points of the two nervous expansions. To this Dove has objected that we see relief in the stereoscope when the two pictures are illuminated only during the moment of an electric flash ; but it may be suggested in reply, that the stereoscopic pictures are always so small as to cause their images to occupy but an extremely small space on the retinas, and the circumstances favor a play of the visual organs so rapid as to be effective even during the brief period of the illumination, very little movement being required for so small a field. Thus far, the theory of corresponding points seems to be well sustained; but the observations of Prof. Rogers and others, and more recently of M. F. August ("Philosophical Magazine," Nov. 1860), show that the idea of absolute identity of points must give way to that of correspondence of place only within certain near limits. Thus, August found that two shining points turning rapidly in plane circles, and viewed obliquely, so that the rays from them must intersect along the conical surfaces described by the two rays during rotation, gave often, as their binocular or resulting image, the appearance of a single curve of double curvature; and he demonstrates that two points of the separate curves which unite to form one point of the image cannot always be seen by the two eyes even at the same moment, nor upon points absolutely corresponding. When the curves are too dissimilar, however, they no longer blend. He concludes that the significance of the corresponding points is rather negative than positive; that the two images can only be united when the points affected in one eye are not too far removed from correspondence with those acted on in the other. The limits of this variation seem to depend on the will and on habit, so as to be extended or reduced by practice. Thus, one used to steady observation of minute objects, more readily perceives surrounding objects as double; and those used to stereoscopic vision gradually improve their power to unite remote or dissimilar views in one. All these results distinctly show the tendency of modern science to find how, more and more completely than had been supposed, the actual impressions on our senses are interpreted with a certain latitude by the mind, so that what seems often to be simply and unmistakably in our sensations is really the product of educated mental inference. Not only is it true that the very near objects in the field of view apparently shift their places when seen by the eyes separately, and all objects within some 250 or 300 feet actually so, by an appreciable (though not visible) change, but beside, if with a binocular camera, its lenses 2½ inches apart, two views of such field of objects be taken, and these placed in the stereoscope and observed by the eyes singly, the near and remote objects are found to appear to shift more or less, as in the natural view. It is thus to coincidence or combination of two dissimilar perspectives, effected during the play and by aid of different convergences of the optic axes, that the stereoscopic illusion of solidity and of relief is obtained. (See Stereoscope.) Within about 300 feet, therefore, our perception of distance from the eye—*i. e.*, of depth on the field viewed, or of the third dimension in space —depends on the cause now considered. The muscular sensation consequent on strongly converging the optic axis, indicates a correspondingly near object. The gradually lessening intensity of the sensation, as the eyes meet on points further away, indicates increasing distance. Beyond about 300 feet, further relaxation of muscular tension becomes quite inappreciable; and hence, beyond such distance we never directly perceive depth, and our judgment of comparative distances then proceeds upon other principles. Of these, the most important are: 1, our known or supposed familiarity with the actual size of objects, and comparison of this with the visual angle they subtend—deceptions in this case being that a large object far off upon a level may be taken to be a smaller one of like kind much nearer at hand than it is, and the reverse; 2, the presence of near or intervening objects of known size, affording the means of comparison (as engravers introduce a man or some familiar quadruped alongside of vast edifices, trees, &c., to afford a standard of magnitude)—deceptions in this case being due to mistakes in regard to the size of the adjacent objects, a boy and a small symmetrical tree together, over a plain, being taken for a man and larger tree at a greater distance; while examples are seen in the fact that we usually underrate the distance of hills or other prominent objects seen over an extent of level land; and 3, aërial perspective, by which the thin, hazed, or bluish appearance of distant mountains suggests a long stretch of intervening atmosphere, and to some extent restores in our conceptions their true magnitude and remoteness. Of course, since apparent size and distance are so intimately connected, one varying inversely as the other, our judgment of actual sizes of distant objects proceeds upon principles readily deduced from what has been said in regard to that of their distances. Illustrations are, that the disks of the sun and moon, when much above the horizon, appear diminished for want of intervening objects of comparison; while, seen beside trees, &c., near the horizon, they appear larger, and again, therefore, nearer. —There are many peculiar phenomena connected with vision, some of which must be considered as defects, and which necessarily attend on peculiarities in the anatomical structure or the functional employment of the eye. Other singular visual appearances result from disease; such are the flashes of light, appearance of bright moving objects, of small, fixed, bright, or pearly circles, one or more, of moving black specks (*muscæ volitantes*), &c., attending on congestions or inflammation, acute or chronic, of the retina, the optic nerve, or the brain. To the larger number of these phenomena, whether from natural peculiarities of the eye, or from disease, the names spectral illusions, ocular spectra, &c., have been somewhat loosely applied. One of the most commonly noticed of these spectra, and which should be referred to here, because, while its appearance often excites alarm, it is usually the most harmless of them all, is the seeing as it were of several fine "linked rings," or small circles united as by a narrow ribbon twisted, no part of it being colored, that is often observed upon suddenly raising or fixing the eye, say on the sky, and then usually sinks down whether the eye follows it or not, and disappears below. This may be seen by the young and healthy, as well as by adults; it is doubtless the impression on the retina of a few cells united into or by a filament and floating independently in some humor of the eye. For the consideration of spherical and chromatic aberration in the organ, see Eye. (See also Color-Blindness.) Mr. T. W. Jones ("Philosophical Magazine," Dec. 1860) concludes that the eyes of very few persons collect accurately to foci all the pencils of light entering them under the most favorable circumstances; usually more perfectly at certain distances, and those taken in certain directions, but not in others, at the same time. Having on a white card a short, distinct black line horizontal, met by a like vertical line at one end, he finds that at 8½ inches distance he perceives (negatively) the vertical line sharp and distinct, but the horizontal not distinct. At 12 inches the result is reversed; at about 10 inches there is indistinct vision of both lines. Hence he concludes that the focalizing effect of his eye is, for horizontally diverging pencils, best at 8½ inches; for those diverging vertically, at 12 inches. The condition, inability of the eye to collect equally well all pencils of light entering it from objects even at a given distance, he terms "astigmatism" (Gr. *α*, without, and *στιγμα*, point). He finds that he cannot, by any adjustment of the eye, or effort, change these results, and is led to think that our actual visual impressions are, at most distances, more indistinct than we are accustomed to suppose them. In the "American Journal of Science," May, 1861, Dr. Levi Reuben called attention to the facts, among others, that, owing to the high degree of transparency of the retina, and its penetrability for rays of all colors, to the unequal refrangibilities of the different elements in white or ordinary colored light, and to the want of perfect achromatism in the eye, the actual image of any object in the retina really consists of as many images as there are elementary colors in the entering light, and superposed, or rather partially coalescing, from before backward, the colors toward red being deepest and those toward violet in front; that hence, the anterior and the deeper surfaces of all retinal images, as truly as their lateral borders, are colored, even if formed by white light; and he concludes that, though in ordinary vision these colored surfaces are inappreciable or disregarded, yet by the light of a dichromatic medium like cobalt glass, which cuts out the middle of the spectrum and transmits its red and blue extremities, such a chasm may occur between the two superposed bodies of colors, the more refrangible group in front and the less refrangible deeper, that peculiar results in vision should occur, and probably a perception rather of lustre than of ordinary colors. Thus, M. Dove many years since showed that the adjustment of the eye to distance varies slightly for red and for blue or violet rays coming from an object at the same actual distance; and he finds that the simultaneous perception of an object under light of the two kinds received by the eyes separately, is attended with perception of lustre, often of highly metallic and perfect character. In the seeing of bodies made of fine laminæ, transparent and slightly separated, as in case of mica, lustre results in like manner, though the vision be confined to one eye; and it seems here to be explained by the focalizing of the light from different laminæ at different depths in the retina; being thus, in fact, equivalent to a confusion of vision, or a peculiar sort of dazzling. The latest experiment of M. Dove is that of viewing a pattern in green lines on red paper, by looking through a red glass with one eye and a green with the other; a perfect lustre or "glance" is thus obtained without stereoscopic combination. A like result follows with a blue pattern on red, blue and red glasses being used.

Sir D. Brewster ("Philosophical Magazine," Jan. 1861) enumerates several of the most noticeable of the peculiar affections of the retina, some of which he had described as early as 1834; others being due to other discoverers. He names, beside the appearance of colors which arises upon agitating or alternating a white with a black surface at certain definite rates before the eye, the following: 1, the polarizing effect of parts of the structure of the eye, giving rise to Haidinger's *houppes*, or minute brushes of yellow crossed with a middle band of violet light; 2, the insensibility of the retina at the place of entrance of the optic nerve; 3, the exhibition of the *foramen centrale* in certain cases by means of its inferior sensibility to a feeble light; 4, the difference of sensibility to light of different parts of the retina; 5, the inability of the retina, beyond the foramen [rather, beyond the yellow spot which surrounds the foramen], to maintain sustained vision of objects; 6, the increased luminosity of objects seen somewhat indirectly; 7, certain appearances of a central unoccupied spot surrounded by lines forming a sort of pavement of minute hexagonal or quadrangular pattern, observed when the eyes are directed toward a flame from coal or wood, at a part where the flame is composed of jets of light succeeding each other at proper interval, and, after some days' practice in this way, seen also when the eye is directed to faintly illuminated surfaces, and which may be supposed to be the visual representation of the outlines of the compressed cellular bodies making up the anterior layer of the retina itself; 8, remains of vessels, cells, &c., in the humors [not however giving the *muscæ volitantes*, as stated by Brewster, the proper *muscæ* being undoubtedly due to impressions made upon the retina by the crowded and sluggish movement of blood corpuscles, dark or venous, in states of passive congestion of that organ].—In the article in the "American Journal of Science," May, 1861, above referred to, Dr. Reuben gave a minute account of the observations thus far made, including his own, in reference to perhaps the most interesting of all the forms of ocular spectra, the perception of the corpuscles of the blood while moving within the minute vessels of the retina—the very seat of vision. This phenomenon had before been observed by many, usually upon turning the eye toward a bright sky; the effect was the seeing apparently of numerous moving glistening points, the place of which seems to be in space a few feet before the eyes. Dr. Reuben found, in 1857, that upon looking through a deep blue glass (cobalt glass) toward a bright sky, the perception of these lucid points became much more distinct, so that any person may thus observe them; the points were then very numerous; successive troops of them suddenly made their appearance over the whole field of vision, moving a short distance, and then vanishing, these repeated accessions corresponding with the pulsations of the heart; the movements were in all directions, but easily found to keep to a given direction in a given part of the field, when the eye was not shifted; the quick movement of the lucid points gave the appearance of as many short glistening lines, of which, however, a few continually turned near the middle of their course to distinct black lines, like strokes of ink, and the whole faded out at various moments from the end of the half to that of the whole pulsation, to be followed by a fresh accession at the next. With glasses of other colors these traces of the blood disks were to be seen with less distinctness, and with some, as violet, red, and yellow, only with extreme difficulty. The case is not one of vision in the proper sense, because the perception is not by light coming from the objects into the eye and refracted by its humors. Still, the perception is just as real as any in ordinary vision; the appearances are not the result of disease, either of the eye or of the nervous system; and as the perception is occasioned by some modification of certain pencils of light which must pass through moving corpuscles of the blood on their way through the retina, it may be named a quasi vision. To account for these appearances, it must be remembered that the retina is through its whole depth transparent; that the only bodies within the eye which can occasion the appearances are corpuscles of blood that can cross the path of the entering light; that the only currents of blood that do this are those in the vessels of the retina; and that these lie in the anterior half depth of the retina, the true sensitive or visual layer being beyond or back of them. Evidently, then, this seeming vision of these bodies is to be sought in some effect of the corpuscles, acting as lenses, upon the minute pencils of converging and almost focalized light as it enters the retina. These bodies will displace in depth, more or less, the foci of the minute pencils that have to pass through them, and may so far recombine different colors as to produce along their course the effect of lustre, or intenser lines of light, thus accounting for the lucid lines, or give rise to an interference that shall occasion the black lines; but the exact manner of their action is not yet determined. Among the more striking appearances noted (some of them by directing the eye with a colored paper over it toward a gas flame), and of results arrived at, were also the following: the quasi vision, in various ways, of the cells or granules in the anterior layer of the retina; discovery, by absence of these in a middle patch, of the place of the "yellow spot," or seat of most distinct vision; quasi vision of broader and slower streams of moving objects, keeping the same directions and covering nearly the whole field of view, as if the more numerous corpuscles moving without jets in the venous radicles; and quite as remarkable as any other, the perception, upon looking for a time through a glass of any color against bright sky or cloud, of a nearly circular or rosetteshaped area, corresponding with the point to which the eyes are directed, and which shows the color complementary to that of the glass used at the time—bluish when the glass is orange, faint orange when it is blue, greenish when the glass is red; thus proving, and it is believed for the first time, that subjective coloration in vision does not always wait to appear after the vision of its complementary, or merely around it, but that within a retina actually receiving and impressed with light of one color, the subjective vision and perception of the color complementary to it can at the same moment exist.

VISTULA (Pol. *Wisla;* Ger. *Weichsel*), a river of central Europe, which has its source in the Carpathians near Jablunka in the S. E. corner of Austrian Silesia, and traverses Galicia, Russian Poland, and Prussia, passing Cracow, Sandomir, Pulawy, Warsaw, Modlin, Plock, Thorn, Kulm, Graudenz, and Marienburg. It discharges its waters into the Baltic by three mouths, of which one is at Dantzic, and the other two open upon the sound called the Frisches Haff. Its length is about 700 m., and it is navigable as far as Cracow. Its principal affluents are the Dunajec, Save, Wieprz, Bug, and Drewenz from the right, and the Pilica, Bzura, and Brahe from the left. It is connected with the Dnieper by the canal of Horodetz, with the Oder by that of Bromberg, and with the Niemen by that of Augustowo.

VITEBSK, or Vitepsk, a government of West Russia, formerly belonging to the Lithuanian provinces of Poland, bounded by Pskov, Smolensk, Mohilev, Minsk, Wilna, Courland, and Livonia; area, 17,212 sq. m.; pop. in 1858, 2,123,904. The principal river is the Düna, which receives most of the smaller streams of the government. The soil is moderately fertile, and most of the inhabitants are farmers. Large numbers of domestic animals are reared, and there are extensive forests of valuable timber. The Düna and its connecting canals afford channels for a flourishing export trade. The principal towns, beside the capital, are Polotzk and Dünaburg, both on the Düna.—Vitebsk, the capital, is situated on both sides of the Düna at its confluence with the Viteba, 95 m. N. from Mohilev; pop. 30,000. It is surrounded by ancient walls and towers, contains 6 Roman Catholic and 2 Greek monasteries, including a fine convent of Basilian monks, and has a number of charitable institutions, 14 churches, an old castle, a bazaar, and manufactories of woollen goods and leather.

VITELLIUS, Aulus, a Roman emperor, born probably Sept. 24, A. D. 15, killed in Rome in 69. He became consul in 48, was subsequently proconsul of Africa, and afterward legate of the same province under his brother. He was a favorite of the emperors Tiberius, Caligula, Claudius, and Nero; and when Galba ascended the throne he was placed in command of the legions of Lower Germany. On Jan. 3, 69, he was saluted at Cologne with the title of *imperator*, and a civil war broke out between him and Otho, who had dethroned Galba. Vitellius was given chiefly to eating and drinking, and was totally unfit for the high position he had received; but circumstances favored him, and his impatient soldiers marched into Italy under Valens and Cæcina, who completely defeated the forces of Otho near Bedriacum, in Cisalpine Gaul. All the armies of the empire now acknowledged Vitellius, and he marched to Rome, which he seems to have reached in July. But the eastern armies revolted, and proclaimed Vespasian emperor; and Antonius Primus, acknowledging the latter, marched with the legions of Illyricum into Italy, and, after defeating the armies of Vitellius, reached Rome. The emperor was found hid in his palace, was dragged through the streets and treated with every kind of indignity, and was finally killed.

VITERBO, a delegation of the Papal States, bounded N. by Perugia, E. by Spoleto and Rieti, S. by the Comarca di Roma and Civita Vecchia, and W. by Tuscany and the Tuscan sea; area, 1,083 sq. m.; pop. in 1853, 128,324. The surface of the N. part is hilly, and a range called Monte Cimino extends S. from Monte Soriano, N. E. of Viterbo, about 30 m. to Monte Virginio, near the lake of Bracciano. The country E. of this ridge belongs to the basin of the Tiber, and the region on the W. to that of Lake Bolsena. A large proportion of the soil is fertile, yielding wine, oil, grain, and pasturage. Alum is found in great abundance. The coast belongs to the malarious marshy district known as the Maremme.—Viterbo, the capital, is situated at the foot of Monte Cimino, about 40 m. N. W. from Rome; pop. 14,000. It is walled and well built, the material of the houses being generally volcanic tufa. In the cathedral of this place Prince Henry of England, nephew of Henry III., was assassinated by Guy of Montfort; and before it Pope Adrian IV. compelled Frederic Barbarossa to hold the stirrup of his mule while he dismounted. There are nearly 50 other churches, an episcopal palace of the 13th century, a town hall of about the same date, and a number of handsome fountains. There are numerous mineral springs in the vicinity. The manufactures are unimportant.—Viterbo is supposed to occupy the site of the ancient Fanum Voltumnæ, where the Etruscan league held its assemblies. The present town was founded or walled by Desiderius, the last king of the Lombards, about 773; and it was included in the territory called the patrimony of St. Peter, granted by the countess Matilda to the pope in 1077.

VITET, Ludovic, a French author and politician, born in Paris, Oct. 18, 1802. He was educated at the normal school, and after a short time devoted to teaching became a contributor to the *Globe* newspaper in 1824. Two years later, under the title *Les barricades* (8vo.), he published a series of dramatized historical sketches, which proved so successful that they were followed by similar works, *Les états de Blois* (1827), and *La morte de Henri III.* (1829). The three have been reprinted as *La ligue* (2 vols. 12mo.). In 1831 he was appointed inspector-general of historical monuments, an office established for his especial benefit. In 1834 he became secretary-general of the ministry of commerce, and representative in the chamber of deputies from the department of Seine-Inférieure; in 1836 a member, and a few years later one of the vice-presidents of the council of state; in 1839 a member of the academy of inscriptions, and in 1845 of the French academy. The revolution of Feb. 1848 deprived him of his offices. He was not a member of the constituent assembly, but was returned to the legislative assembly, in which he sided with the conservatives. He opposed the *coup d'état* of 1851, and has since lived in retirement. Among his best works are: *Eustache Le Sueur* (1843), an essay on the art of painting in France; *Monographie de l'église de Notre Dame de Noyon* (1845), a disquisition on the architecture of the middle ages; *Les états d'Orléans* (1849); and *Le Louvre* (1852).

VITORIA, or VITTORIA, a town of Spain, capital of the Basque province of Alava, situated on the road from Madrid to Bayonne, 29 m. S. S. E. from Bilbao; pop. 10,000. It has some manufactures, and is an important entrepot of trade between France and the central provinces of Spain. It was probably occupied by the Romans, and received its present name from Sancho el Sabio of Navarre in commemoration of a victory over the Moors about 1180. On June 21, 1813, Wellington defeated here the French army under Joseph Bonaparte and Jourdan, capturing 150 guns and $5,000,000 worth of plunder, the accumulated booty of the 5 years' French occupation of the peninsula, and driving the fugitives across the Pyrénées into France.

VITRINGA, CAMPEGIUS, a Dutch theologian, born in Leeuwarden, May 16, 1659, died in Franeker, March 21, 1722. He was educated at Franeker and Leyden, received from the latter institution at the age of 20 the degree of doctor of divinity, in 1681 became professor of oriental literature at Franeker, in 1683 of theology, and in 1693 of sacred history. His theological and exegetical works are numerous. His son, of the same name, was also distinguished as a theological writer.

VITRIOL, BLUE. See COPPER, vol. v. p. 682.

VITRIOL, OIL OF. See SULPHURIC ACID.

VITRUVIUS POLLIO, MARCUS, a Roman architect, author of a treatise *De Architectura Libri X.*, from the prefaces to the different books of which is derived almost our only knowledge of him. His birthplace and the dates of his birth and death are unknown; but he appears to have served as a military engineer under Julius Cæsar in Africa in 46 B. C., and he was an old man when he wrote his work, which is dedicated to the reigning emperor, who was probably Augustus. He says he was appointed by him, with three others, to the office of superintending and improving the military engines, and received from his patronage a sufficient provision for his life. He seems to have been unsuccessful as an architect, for only one building by him is mentioned, the basilica at Fanum. His treatise professes to be designed to furnish the emperor a standard by which to judge of the buildings already erected or to be erected by him, and is a valuable compendium of the works of Greek writers on the subject, with chapters on the proper education of an architect and many kindred topics. The first edition was printed at Rome about 1486, and it has been many times edited and reprinted; the most valuable critical edition is that of J. G. Schneider (3 vols. 8vo., Leipsic, 1807–'8), and the two latest are those of Stratico (4 vols., Udine, 1825–'30) and Marini (4 fols. fol., Rome, 1836). It has been frequently translated into Italian, French, and German; and English translations have been made by Robert Castell, with notes by Inigo Jones and others (2 vols. fol., London, 1730); by W. Newton, with notes and plates (2 vols. fol., London, 1771–'91); by W. Wilkins (4to., 1812); and by Joseph Gwilt (8vo., 1826).

VIVES, JUAN LUIS, a Spanish scholar and writer, born in Valencia in 1492, died in Bruges, Flanders, in 1540. He was professor of belles-lettres in the university of Louvain before he was 30 years of age, and was invited to England by Henry VIII., who made him the tutor of his daughter Mary, and subsequently professor in Corpus Christi college, Oxford. He was imprisoned for opposing the divorce of Catharine of Aragon, and on his release settled at Bruges. Budæus, Erasmus, and Vives were called the triumvirs of the republic of letters of the 16th century, and it was said that the first excelled in wit, the second in learning, and the third in judgment. Vives was a voluminous author, and his works were collected at Basel (2 vols. fol., 1555) and Valencia (8 vols. fol., 1782–'90). The most important are: *De Corruptis Artibus; De Religione;* commentaries on Augustine's "City of God," the "Dream of Scipio," and the "Bucolics" of Virgil; and several educational works, volumes of letters, &c. The commentary on "The City of God" was placed on the *Index Expurgatorius*, because Vives had given a place in the heavenly mansions to Cato, Numa, Camillus, Seneca, &c.

VIVIANI, VINCENZO, an Italian mathematician, born in Florence, April 5, 1622, died Sept. 22, 1703. He was descended from a noble family of his native city. At the age of 17 he became a pupil of Galileo, then old and blind, and continued with him until his death. Afterward he studied under Torricelli, formerly a fellow pupil. In 1664 Louis XIV. included him in the list of foreign savants on whom he bestowed pensions; and in 1666 he became first mathematician of the grand duke of Tuscany. He wrote numerous mathematical treatises, but his great works were the restoration of the treatise of Aristæus, a contemporary of Euclid, *De Locis Solidis*, and of the 5th book of Apollonius of Perga on the conic sections; the latter was entitled *Divinatio in quintum Conicorum Apollonii Pergæi* (1659), and the former *Divinatio in Aristæum* (1701). An Arabic version of Apollonius was discovered about the same time, and showed that Viviani had carried the subject further than the Greek mathematician himself.

VIZAGAPATAM, a district of British India, presidency of Madras, included in the territory known as the Northern Circars, bounded N. and N. E. by Ganjam, E. and S. E. by the bay of Bengal, S. and S. W. by Rajamundry, and W. and N. W. by the district of Guntoor; area, about 7,650 sq. m.; pop. 1,254,272. The most important towns are the capital, of the same name, and Bimlipatam. The sea coast, forming a portion of what is commonly known as the coast of Orissa, is bold and steep, with a ridge of rocky hills extending along its entire length. The surface is mostly mountainous, and is drained by several small streams. The Eastern Ghauts extend in a N. E. direction along the western boundary. In many places the soil is strongly impregnated with saltpetre, and calcareous tufa and iron ore are abundant. The climate on the coast is hot, moist, and relaxing, and inland equally warm, though drier. In some places the soil is fertile, and produces rice, maize, millet, oil seeds, various kinds of pulse, sugar cane, indigo, cotton, and tobacco. The manufactures are numerous. The French obtained possession of Vizagapatam in 1753, and retained it till 1759, when Clive expelled them and annexed the country to the territories of the British East India company, to whom it was confirmed by the emperor of Delhi in 1765.—VIZAGAPATAM, the capital, is situated at the mouth of the river of the same name, on the W. shore of the bay of Bengal, in lat. 17° 41′ N., long. 83° 24′ E., 450 m. N. E. from Madras; pop. about 40,000. It stands on a small peninsula near a remarkable bold rocky hill about 1,500 feet in height, called the Dolphin's Nose, is a military station, and has a large trade.

VIZIADROOG. See GHERIAH.

VIZIAPOOR. See BEJAPOOR.

VIZIER, VIZIR, or VESIR (Arabic, the bearer of a burden, a porter), a title given to the ministers of the Ottoman Porte, and other dignitaries. It was formerly applied to the grand vizier; to the viziers of the bench, who form the divan of the grand vizier; to the beglerbegs or governors of Roumelia, Anatolia, Damascus, and Cairo; to the 4 high judges; to the grand equerry, the *sirdar* or field marshal, the chief master of the forests, and to others; but its application is now more limited. It is sometimes given to the governors of sandjaks, as was the case with Ali Pasha of Janina; and in former times it was also applied to the *silihdar* or armor-bearer of the sultan, and also to the aga of the janissaries, two offices which no longer exist. Viziers are distinguished by a velvet dress, embroidered with gold, pearls, and precious stones, by a turban ornamented with diamonds, and by a standard on the top of which are 3 horse tails, and which is carried before them. Hence the title has been given them of pashas of 3 tails. The grand vizier is the highest officer in the empire, represents the sultan, presides over the divan, and alone decides, commands the centre of the army in battle, and is the only subject who is saluted with the *alkish*, a kind of benediction, the words of which are: "God give a long life to our master." At the time of his appointment he receives from the sultan a seal, on which the name of the monarch is engraved, which he is obliged to wear always on his bosom, and by authority of which he rules with absolute power in the name of his master.—The caliph's lieutenant was called vizier by the Arabs at a very early date; but the first officer of that name in the Turkish empire was Ala-ed-Deen, who was appointed in 1326 to that position by his brother, the sultan Orchan. There was originally only one; but the number was afterward increased, so that the prime minister was called *vizir azim*, grand vizier. Mohammed II. had 7 viziers, Amurath III. 6, and Amurath IV. 9; but from the reign of Achmet III. only 7 could be really called ministers. In the divan or grand council, the viziers are not allowed to give their opinion until it is asked by the grand vizier; and for this post men are selected who understand the law, and are already eminent.

VLADIMIR, a central government of European Russia, bounded N. by Jaroslav and Kostroma, E. and S. E. by Nijni Novgorod, S. by Tambov and Riazan, S. W. by Moscow, and N. W. by Tver; area, 18,062 sq. m.; pop. in 1858, 1,207,908. It consists chiefly of an undulating plain, watered by the Oka, its affluent the Kliasma, and many other rivers, and diversified by forests, heaths, and morasses. There are valuable iron mines. The soil is sterile, and the climate, though healthy, is subject to extremes of heat and cold. Various sorts of grain are raised, as well as hemp, flax, and fruits, but agriculture is of less importance than the manufactures, which include iron ware, cotton, woollen, and linen goods, glass, leather, and earthenware. Pereslavl and Murom are the principal towns, beside the capital.—VLADIMIR, the capital, is situated on the Kliasma, 120 m. E. N. E. from Moscow; pop. 7,500. It has a cathedral with 5 domes, 24 other churches, and 2 convents. It is one of the oldest cities of Russia, and was the capital of the grand principality of Russia from 1157 to 1328.

VLADIMIR THE GREAT, grand duke of Russia, died near Kiev in 1015. He was an illegitimate son of Svatoslav, who in 970 divided his dominions between his three sons, Yaropolk and Oleg, who were born in wedlock, and Vladimir, the last named receiving Novgorod as his share. After the death of their father in 972, the two legitimate sons lived in harmony until 977, when a quarrel broke out between them, in which Oleg was slain and his possessions taken by his brother. Vladimir, fearing a similar fate, fled to the Varangians, and Novgorod was quietly occupied by Yaropolk. In 980 Vladimir returned with a large body of troops, declared war against his brother, and marched on Kiev, the capital of his territory. By the treacherous advice of his chief councillor Blude, Yaropolk gave himself up to the mercy of Vladimir, who ordered him to be put to death. Blude for three days was treated with the highest distinction, at the end of which time the king said to him: "I have now fulfilled my promise; as executor of justice I condemn you to death;" and the traitor was immediately executed. The Varangians were also ungratefully treated; they were permitted to seek refuge in the Byzantine empire, but before they reached it the emperor was privately informed of their coming, and they were all taken. Vladimir was now monarch of an empire which extended from the Black to the neighborhood of the Baltic sea. He engaged in wars with the neighboring states, in most of which he was successful. His dominions embraced many tribes, who, though nominally subject, had been really independent. These he compelled to respect his authority, and in order to bind his subjects still more closely by the influence of religious feeling, he erected at Kiev the idols of Perun, the supreme god of the Slavi, and other inferior deities, and often sacrificed to them a number of prisoners. He had numerous wives and concubines, and according to the chronicles no woman in the country was secure from him. As the fame of his military exploits was great, it became an object with the neighboring nations to convert him to their religion; but Vladimir despatched delegates to the surrounding Christian and non-Christian countries to inspect their forms of worship and to report. The Greek church, which had many converts in Russia, was the one upon which he finally decided; but as he coupled ambitious views with his conversion, he began an attack upon the frontiers of the Greek empire, and laid siege to Theodosia in the Crimea. After its capture he sent to Constantinople demanding the hand of the princess Anna, daughter of the emperor Romanus II. and sister of the reigning emperors Constantine and Basilius, threatening war in case of refusal, and promising alliance and the adoption of the faith of the Greeks in case of compliance. His demand was assented to, and he was accordingly baptized, and immediately set about the task of establishing Christianity and destroying paganism. He built churches, founded seminaries for education, and, according to Russian accounts, became thoroughly changed in his character. His later years were disturbed by the rebellion of Novgorod, at the head of which his son Yaroslav put himself; and on his march to suppress the insurrection he died, having divided his empire among his 12 sons. By the Russian church he is made a saint, and deemed equal to the apostles; and the order of St. Vladimir was founded in his honor by Catharine II.

VODENA, or Vodhena. See Edessa.

VOGEL. I. Johann Karl Christoph, a German educator and physicist, born at Stadt Ilm, in Schwarzburg-Rudolstadt, July 19, 1795. His father was an eminent physician, and subsequently professor of medicine in the university of Kasan. He was educated at the university of Jena, and in 1816 became instructor in ancient languages at Tharand, and subsequently a teacher in an institution near Dresden. In 1821 he was appointed assistant director and in 1824 director of the state high school at Crefeld, and in 1832 director of the *Bürgerschule* at Leipsic, where he soon after commenced the establishment of a polytechnic school. He introduced a complete system of gradation in the schools of the kingdom, establishing elementary, burgher, and real or high schools in every considerable town. He has published a large number of text books, has also written much on the subject of teaching, and since 1851 has edited *Die höhere Bürgerschule*, an educational journal. II. Elisa, daughter of the preceding, born in 1823, is the author of several works of fiction, which have had an extensive circulation; and one of them, *Musikalische Märchen* (Leipsic, 1852), has acquired a reputation out of Germany. III. Eduard, a German traveller, brother of the preceding, born in Crefeld, Prussia, March 7, 1829, murdered in the kingdom of Waday in Soodan, Africa, in 1856. He studied astronomy at Berlin under Prof. Encke, and was attached for two years to Mr. Bishop's observatory in Regent's park, London, where he aided Mr. Hind in making several astronomical discoveries. In 1852, the British government being desirous to send out another assistant to Dr. Barth, Dr. Vogel volunteered his services, and left London, accompanied by two volunteers from the corps of sappers and miners, in Feb. 1853, taking with him a full supply of astronomical, magnetical, and other instruments. He reached Moorzook in Fezzan, Aug. 8, 1853; and in Jan. 1854, he arrived at Lake Tchad, and proceeded to Kuka, expecting to meet Dr. Barth, who was absent on a journey to Timbuctoo. On Dec. 1, 1854, Dr. Barth returned, and met Dr. Vogel at Bundi, 230 m. W. of Kuka, whence the former started on his return to Europe, while Vogel and his companions remained in Africa to prosecute their explorations. He visited Yakoba, crossed the Chadda in April, 1855, and penetrated into the kingdom of Waday, where he was detained for some time, and finally beheaded.

VOGT, Karl, a German savant, born at Giessen, July 5, 1817, where his father, a well known author of valuable medical works, was a professor in the university. He began in 1833 the study of medicine, and in 1835 removed with his father to Bern, where he studied anatomy and physiology under Valentin. In 1835 he went to Neufchâtel, where he spent 5 years in studying natural history with Agassiz and Desor. Of the *Histoire naturelle des poissons d'eau douce*, which Agassiz published, Vogt claims to have written all of the first volume and most of the second. He also published *Im Gebirge und auf den Gletschern* (Soleure, 1843); *Lehrbuch der Geologie und Petrefactenkunde* (Brunswick, 1846); *Physiologische Briefe* (2d ed., Giessen, 1854); and *Zoologische Briefe* (Bern, 1851). In 1844 he went to Paris, and thence in 1846 to Italy, whence he was recalled in 1847 to become extraordinary professor of natural history at Giessen. In 1848 he engaged with great ardor in the revolutionary agitation which pervaded Germany, was a democratic member of the Frankfort parliament, and lost his professorship and was obliged to leave Germany in consequence of his political ultraism. Since then he has lived mostly at Bern and Nice. In 1852 he was appointed professor of geology at Geneva, and in 1853 he was named to the same chair at Bern. In 1856 Prince Napoleon invited him to join his expedition in the northern Atlantic. Among his works, that which has excited the most attention is *Köhlerglaube und Wissenschaft* (4th ed., Giessen, 1856), which has been widely attacked as atheistic. In his scientific writings he is distinguished by a lucid style and a remarkable talent for popular instruction.

VOICE, an audible sound produced by means of the larynx. The larynx is a complicated organ, consisting of 5 cartilages, attached to each other, and the uppermost connected with the hyoid or U-shaped bone, which forms the upper part of the prominence in the throat commonly called Adam's apple; of two bands of ligamentous tissue so arranged as to act like the reeds in the reed pipes of the organ; and of several pairs of delicate muscles which have for their office the production of such changes in the form of the organ as will enable it to utter a variety of sounds. The 5 cartilages are the thyroid, cricoid, two arytenoid, and the epiglottis. The thyroid, or shield-shaped, is formed of two plates of cartilage nearly quadrangular in form, but having each a horn at their internal upper and lower corners, and which, being united to each other at their front edge at an angle of about 60 degrees, form the lower portion of the Adam's apple. The upper horns attach this cartilage to the hyoid bone, while the lower form its bond of connection with the cricoid cartilage next below it, which, as its name imports, bears considerable similarity to a seal ring. The thyroid cartilage is open posteriorly, but the cricoid has its broadest or seal portion posterior, while the narrow part of the ring is within the angle of the thyroid, and can be distinguished by the finger just below it. The arytenoid (funnel-shaped) cartilages are two irregular pyramidal cartilages attached to the seal portion of the cricoid cartilage, and situated in the posterior portion of the larynx, forming the walls of the aperture of communication between the pharynx and glottis. The epiglottis, or cover of the glottis, is an oval-shaped cartilage, attached by its apex to the angle of union of the plates of the thyroid cartilage, and acts as a valve to protect the cricoid and arytenoid cartilages from the contact of foreign bodies passing from the mouth into the pharynx. The vocal ligaments are two narrow bands of yellow, highly elastic tissue extending from the arytenoid cartilages to the angle of the thyroid. In their quiescent condition they form two sides of an acute angle, the apex of which is slightly rounded; but by the action of certain muscles, of which we shall speak presently, their edges are brought parallel to each other in the act of speaking or singing. The muscles which move these various cartilages are: the crico-thyroid, which are attached at their lower extremities to the front of the cricoid, and at their upper to the sides of the thyroid just before its lower horns, and have for their office a partial rotation of the cricoid cartilage upon its axis; the thyro-arytenoid, attached anteriorly to the sides of the thyroid cartilage, and posteriorly to the anterior angles and outer edges of the arytenoid cartilages; their office is to approximate the sides of the arytenoid cartilages, facing each other, and thus render the vocal ligaments parallel; the posterior crico-arytenoid muscles, attached to the posterior surface of the cricoid, and passing obliquely outward to be inserted into the outer angle of the arytenoids; the lateral crico-arytenoid muscles, attached to the inner sides of the cricoid cartilage and to the outer angles of the arytenoids, and by approximating the front portions of these diminishing the breadth of the anterior part of the glottis; and the posterior arytenoid muscles, lying behind the arytenoid cartilages, and consisting simply of decussating fibres, whose office is to close the back part of the glottis. There are also some muscular fibres passing from the arytenoids to each side of the epiglottis, which aid in more effectually closing it over the glottis. Below, the larynx opens into the trachea, and thus forms a part of the apparatus of respiration. The larynx as the vocal organ resembles a reed instrument; the vocal ligaments answering to the vibrating metallic slip called the reed; the sides of the larynx with their pouches serving to swell the volume or alter the tone, and the elastic and contracting or expanding trachea forming the flexile tube; while the epiglottis by its opening and closing performs its part in admitting or checking expiration, and the numerous muscles by varying the positions of the several parts provide for a variety of notes far greater than any human mechanism has been able to produce by a contrivance so simple.—The physiology of the larynx has been very carefully investigated and illustrated, by experiments and studies on both the dead and living organ, by Müller, Henle, Willis, Grenié, Savart, Wheatstone, and Bishop. The results of their investigations are briefly, that the voice is produced by the vibration of the vocal ligaments caused by forcible expiration of the air from the bronchial tubes and trachea, the ligaments having first been rendered more or less tense by the action of the muscles we have described, and sometimes in part also by the column of air expelled. In the low notes, the vocal ligaments are relaxed, and only rendered tense by the pressure of the air, and hence these are sometimes called chest notes; in the high notes, on the contrary, the muscles are called into action, and the cords and ligaments are thereby rendered exceedingly tense, while the glottis is narrowed, and intermediate notes are produced by a more moderate degree of muscular exertion. The prominence of the thyroid cartilage in men gives the vocal ligaments a greater length than those in women in the proportion of 3 to 2; and from the greater vibration consequent upon this their voices are deeper and heavier, while they are also incapable of the extreme tension which characterizes the best female voices. Male voices are classed according to the vibratory power of the vocal cords as base, baritone, or tenor, the last being the highest, and dependent upon the inferior length of the vocal cords. Female voices in like manner are classed as contralto, mezzo-soprano, and soprano. The laryngeal nerves supplied to the muscles of the larynx are liable to paralysis, which destroys the voice by taking away the power of rendering the vocal ligaments tense. Dr. Bennati, an Italian physician who died a few years ago, devoted much attention to the investigation of the voice. He announced as one result of his studies that phonation, or the sounds of the voice in speaking, had been very improperly confounded with modulation, or the sounds of the voice in singing. In the production of the former the larynx alone was concerned, while in the latter the muscles of the hyoid bone, of the tongue, and of the upper anterior and posterior parts of the vocal tube materially modified the voice. The ordinary compass of the voice in singing in the laryngeal notes is about 2 octaves. Several eminent singers have been able to extend their voices to 3 octaves, and Catalani's voice is said to have had a compass of 3½. In speaking, the range of the voice is much less than in singing, 1½ octaves being the utmost limit with good speakers.—The musical sounds of the voice are treated under the title Music, and we shall therefore speak in this article only of phonation. While the larnyx alone is directly concerned in the production of the speech notes, it would exhibit a very partial and imperfect view of the subject were we to omit all reference to the indirect influences exerted upon it by other organs, muscles, and cavities of the body. The deep, or, as they are often called, the chest notes of the base voice are due in part to the action of the intercostal muscles, and to the expansion and contraction of the trachea and bronchi, which force an increased volume of air from the lungs through the larynx, as can be easily demonstrated by placing the hand upon the chest of a speaker while he is uttering deep heavy tones. In the female voice and the tenor voice of the male, on the other hand, the velum palati, the tonsils, the posterior nares, the nasal and buccal cavities, and the maxillary and frontal sinuses all modify greatly the sounds of the voice, though none of them have any active share in producing it. Some writers even go so far as to attribute to the spinal column and the abdominal cavity considerable influence in modifying the tones or quality of the voice. The so called "nasal tones" result, as is well known, from an obstruction of the posterior nares or of the frontal sinus, which prevents the passage of the vibrations of the air through the nasal and frontal cavities. Speech notes have been divided into simple and compound. The simple consist of a single rising or falling movement of the voice, which may extend from a semitone up to an octave. We have therefore 8 rising and as many falling simple speech notes, or 16 in all, in which the voice passes through equal spaces in equal times. But the voice is retarded or accelerated either in the beginning, middle, or end of some speech notes, so that it passes through unequal spaces in equal times. The compound speech notes consist of both the simple vocal movements (upward and downward), combined in a variety of circumflexes. Dr. Rush classifies these circumflexes as follows:

I.—The Number of Constituent Vocal Movements.

1. Simple circumflex consists of two movements.
2. Compound circumflex consists of three movements.
3. Continuous circumflex consists of more than three movements.

II.—The Direction of the First Vocal Movement.

1. Direct circumflex has the first an upward movement.
2. Inverted circumflex has the first a downward movement.

III.—The Dimensions of the Vocal Movements.

1. Equal circumflex, each movement of equal dimension.
2. Unequal circumflex, each movement of unequal dimension.

Acceleration or retardation of the circumflex speech note may occur at its beginning or in any part of its course, as in the simple speech note, or it may move through equal spaces in equal times. The variation of the circumflex as well as of the simple speech note in ordinary use is very great, and accounts for the great number of sounds which are heard in human utterance. The voice in its speech notes varies in quantity from the moderate and quiet tones of ordinary conversation, ranging only from 3 to 5 notes on the scale, to the impressive and impassioned utterances of the more powerful emotions, in their natural expression or in their rendering by a skilful elocutionist, and the full orotund notes of the orator. In conversation, the perfect speech note in woman blends something of oral softness with laryngeal firmness, and avoids the high sharp notes of the soprano; in man, the firmness of the laryngeal note is modified by a degree of pectoral depth, though avoiding the other extreme of the low notes of the base, the tenor for male and the contralto for female voices constituting the entire proper range of the speech notes. In public speaking, the subjects of the address being usually such as call forth in the speaker the expression of deep and earnest feeling, the quality of the voice becomes grave and powerful and ample in resonance in proportion to the impressiveness of the occasion or subject of speaking. The "orotund quality," as Dr. Rush names it, is the most desirable tone of voice for the public speaker, and that which has characterized the best orators in all ages. It is the natural utterance of the medium notes of the tenor and baritone in the musical scale, and is naturally attended by a wider opening of the mouth internally as well as externally, and a greater intermingling of bronchial depth and laryngeal resonance, than the conversational voice. The requisites for the improvement of the voice in speaking or reading are the following: to produce the speech notes in such a way as not to injure the vocal organs or the general health; to improve its quality in clearness and resonance throughout its entire compass; to extend that compass both above and below; and to produce a prolonged speech note on each degree of its compass.—Among the most important treatises on the cultivation of the voice are the following: "The Philosophy of the Human Voice, embracing its Physiological History," &c., by James Rush, M.D. (Philadelphia, 1844); "Cull on Public Reading" (London); William Russell, "Pulpit Elocution" (Boston), "Lessons in Enunciation" (Boston), and "The American Elocutionist" (Boston); Guilmette's "Vocal Physiology, or Progressive System for the Scientific Education of the Human Voice," edited by the Rev. E. Winthrop (New York, 1861).

VOIGT, Johannes, a German historian, born at Bettenhausen in Saxe-Meiningen, Aug. 27, 1786. He was educated at Jena, in 1809 commenced teaching at Halle, and in 1812 was licensed as a public teacher. In 1815 he published at Weimar his first historical work, *Hildebrand als Papst Gregor VII. und sein Zeitalter.* He was appointed professor of the historic sciences at Königsberg in 1817, the year following published his *Geschichte des Lombardenbundes*, and in 1822 became professor of mediæval and modern history in the university of Königsberg. He had as early as 1818 projected a history of the Teutonic order, and the Prussian government had granted him the means of making a tour of investigation throughout Germany for the purpose of procuring the materials for it. After spending nearly 10 years in the study of the subject, he published as the first instalment of the work his *Geschichte Preussens von den ältesten Zeiten bis zum Untergange der Herrschaft des Deutschen Ordens*, in which he has brought to light many interesting facts from documents hitherto unknown.

VOIGTLAND (Lat. *Terra Advocatorum;* Ger. *Voigt*, from the Lat. *advocatus*, a procurator, and *Land*, a country), in the history of the German empire, the name applied to the immediate possessions of the emperors, the control of which was intrusted by them to *Voigts* or procurators. In the widest acceptation they comprised a part of the present district of Zwickau in the kingdom of Saxony, known as the Voigtland circle; a part of the grand duchy of Weimar; the Reuss territories; the circle of Renneburg in Altenburg; and the territory of Hof in Bavaria.

VOISIN, Félix, a French physician, born in Mans in 1794. He was educated at Paris under Esquirol, and in 1821 became associated with M. J. P. Falret in the establishment of a private insane hospital in the vicinity of Paris. In 1831 he received an appointment as physician to the Bicêtre asylum, with which he is still connected. In 1833 and again in 1839 he made some attempts to instruct the idiot children connected with the Bicêtre, and in 1840 placed them under the care of M. Vallée. (See Idiocy.) In his investigations of mental disorders and infirmities, M. Voisin has been influenced by the phrenological principles of Gall and Spurzheim, in which he is a firm believer. His principal works are: *Du bégaiement* (8vo., Paris, 1821); *Des causes morales et physiques des maladies mentales* (1826); *De l'homme animal* (1839); *De l'idiotie chez les enfants* (1843); *Du traitement intelligent de la folie* (1847); and *Analyse de l'entendement humain* (2 vols. 8vo., 1851-'7).—Auguste Félix, a French physician, grandson of the preceding, born in Paris, May 25, 1829, has published several medical monographs of merit.

VOITURE, Vincent, a French poet and miscellaneous writer, born in Amiens in 1598, died in Paris, May 27, 1648. He was the son of a wine merchant, and having attracted the notice of some noblemen by his talents he was introduced to the Hôtel de Rambouillet, the fashionable resort of the wits of the time, where he was soon considered the *bel esprit par excellence*, and managed to be on a footing of equality with the most aristocratic members of that society. Though attached to Gaston of Orleans, he was employed in Italy by Cardinal Richelieu; and under the regency of Anne of Austria he was appointed a steward to the king and interpreter of ambassadors near the queen, receiving at the same time a handsome pension for doing nothing. His passion for gambling and amours with women of all ranks involved him in numerous troubles during the latter part of his life. When he was nearly 50 years old, he fought a duel with another guest of the Hôtel, still older than himself, both being in love with the second daughter of the marchioness of Rambouillet. He was one of the original members of the French academy. His letters and poems, most of which were occasional, were first published in 1649 by his nephew Pinchesne. A new edition has appeared in the *Collection Charpentier* (2 vols. 12mo., Paris, 1856).

VOLATILE OILS. See Essential Oils.

VOLCANO (Lat. *Vulcanus*, the god of fire), an opening in the crust of the earth from which proceed heated gases sometimes in flames, volumes of steam, eruptions of ashes mixed with scoriæ and large stones which are often red-hot, and currents of melted rock, called lava. The phenomenon is chiefly limited to certain regions in different parts of the earth, which are known as volcanic districts; and in these districts established and permanent vents may continue constantly sending forth smoke and flame, like Stromboli on one of the Lipari islands in the Mediterranean; or eruptions of more fearful character may take place at irregular intervals, which may be separated by the lapse of hundreds of years. The matters thrown out from volcanoes generally accumulate around the openings or craters till they build up a hill, or even a mountain several thousand feet high; but the vent may continue for a long time at a low level, and is even formed beneath the sea, sometimes without rising above its surface. Instances have occurred, of which one is described in the article GRAHAM ISLAND, of a volcanic eruption suddenly forming an island in the midst of the sea. In the case alluded to, the island remained for some time, and then disappeared, being washed away by the waves. Other volcanoes that have been suddenly raised up have remained permanently in the form of mountains. Such are the volcano of Jorullo in Mexico (see JORULLO), and the volcano of Monte Nuovo (see VESUVIUS). The greatest volcanic mountains, as Etna, Hecla, and Vesuvius, are produced by accumulations of volcanic matters, as beds of lava, ashes, and scoriæ, sometimes alternating with beds deposited beneath the sea charged with the vestiges of marine animals, the collection of which must have occupied long periods of time. This is especially apparent in the case of Etna. Volcanoes sometimes remain inactive so long as to lose their peculiar character; but they may at any time break forth again. Vesuvius was not known to the ancients as a volcano, though it was apparent from the form of the mountain and the materials of which it was composed, that such must have been its character at some former period. The earliest eruptions of Etna of known date commenced about 2,300 years ago, and of Vesuvius nearly 18 centuries back. Ancient volcanic mountains are met with in Hungary, in central France, and other places, of whose eruptions no record exists. Such are termed extinct volcanoes, but they may again become active. —Volcanic action is usually preceded by earthquakes, which may continue for a long time. By these the earth is rent open in fissures through which volcanic matters are ejected, and in which they become consolidated, forming what are known as dikes. Previous to the production of Monte Nuovo, earthquakes had been of common occurrence along the Neapolitan shore for two years. But volcanic eruptions do not always occur to relieve the subterranean movements caused by the commotion of the bodies of molten matter in the interior; or it may be that this relief may come by the outbreak of volcanoes many hundred miles distant. The earthquake of New Madrid, Missouri, in 1811–'12, which continued almost incessantly for several months, is spoken of by Humboldt as a remarkable instance of such a phenomenon far from any volcano. It is supposed, however, on account of the contemporaneous shocks which destroyed the cities of Caracas and La Guayra in Venezuela, that this district may be upon a range of volcanic tracts, overlying a subterranean ocean of lava, that extends from the Andes of Chili northward through Mexico, and possibly is continued on to the volcanic district of California and Oregon.—A communication from the interior being opened to the surface, the power of the elastic forces beneath is exhibited in the eruption of clouds of steam and floods of hot water, which often bring up immense quantities of earthy matters in the form of mud; and to such products the eruption is sometimes altogether limited. The currents of mud pouring out from the craters have in some of the volcanoes in the Andes, described by Humboldt, attained enormous dimensions, so as to fill up valleys and cover a wide surface of country. The outflow, whether of mud or of lava, is not always limited to a single crater; but several have been known to open in the same vicinity, as around the side of a mountain, and continue in action at the same time. By their falling into each other, or by the enlarging of a single crater, immense chasms are formed of great depth, sometimes several miles in circumference. These are distinguished from the craters by the name of *calderas*, the Spanish word for caldrons, and in the base of these soon appear new craters which not only introduce great changes in the form of the calderas, but modify the form and add to the dimensions of the volcanic pile. This, too, may change by subsidence of any portion of it.—The lavas which form the great bulk of volcanic products consist of a variety of mineral substances brought together in a more or less liquid condition by fusion. When thoroughly melted, the product is a homogeneous mass, which when suddenly cooled assumes a glassy character and is known as obsidian. A few volcanoes, as that in the island of Bourbon, produce this kind of lava almost exclusively; and it is found to a greater or less extent among the lavas of almost all volcanoes. All lavas, when thoroughly melted and suddenly cooled, assume this glassy condition. But the more common kind of lava is that known as the stony, which even when flowing in a current consists, as maintained by Mr. G. Poulett Scrope, of the crystalline grains of minerals at a red or white heat, but not fused, kept apart by the intervention of water or of aqueous vapor in a peculiar state of condensation and adhesion to their surface, which admits of their moving as freely one upon another as if the fusion were complete. As the particles become consolidated on cooling, they form volcanic rocks, such as the trachytes, in which the particles remain distinct; and in this their structure is like that of the rocks classed as igneous, as granite and gneiss. The compactness of the stony lavas varies with the degree of pressure to which they are subjected while cooling. The current of lava, cooling under the pressure of the atmosphere, assumes an open cellular structure from the gradual escape of the aqueous particles mixed among the mineral substances. Sometimes the steam in escaping so distends the mineral substance as to give it the form of pumice. Cooled under the surface of water, the lava is found to be much more compact; and that cooled beneath a heavy pressure of superincumbent masses of rock, hundreds or thousands of feet thick, must doubtless be as compact as the ancient basaltic formations, the composition of which is like that of modern lavas. While the lavas of different volcanic districts possess the same general character and composition, those from different localities, like varieties of the same rock from different places, have some peculiarities by which they may be recognized. These may consist in the prevalence of particular minerals, a great variety of which are found crystallized in the cavities of lavas; or a single species may be peculiar to the lavas of a certain district. The minerals of which lava is mostly composed are feldspar and augite (or hornblende), and oxide of iron; and through the mass made up of these are interspersed numerous others, often crystallized, many of which are also common to the ancient crystalline rocks. Among the most abundant of these are olivine, leucite, garnet, idocrase, epidote, and stilbite. Sulphur, the presence of which in vast quantities is indicated in the fumes that escape from the crater, is found in various metallic combinations, and, sublimed by the heat, collects around the walls of many craters; and if it be removed, new layers soon gather even during the periods of comparative repose of the volcano. The ashes projected from the craters are but the comminuted fragments of the lavas; and with them are thrown out the larger fragments termed scoriæ, together with masses of rock of all sizes. In the crater the mineral substances, more or less thoroughly melted, are pressed upward by the expansion of the elastic vapors beneath; and as the force of these fluctuates, the fluid mass rises and falls, often with great violence and through long distances. By sudden production and escape of great bodies of steam, the disrupted fragments are thrown with immense force high into the air, and the sky is filled with the fine stony particles, which float away as volcanic ashes, and are finally precipitated upon the surface, it may be hundreds of miles distant. (See ASHES, vol. ii. p. 202.) In these eruptions flashes of electric light, greater than ordinary flashes of lightning, are a remarkable phenomenon, especially at night over the craters. The cause of these, for a long time unexplained, is now understood to be the friction of the particles of aqueous vapor against the stony substances with which they are intermixed; and the phenomenon is exemplified by the electricity developed on the jet of escape steam from a boiler being directed against any hard substance. The enormous power required to raise a column of melted lava 2½ times as heavy as water to the summit of mountains, can unquestionably be furnished by the expansion of steam at high temperatures; and when heated to 1000° F. it is calculated that the power exerted should be more than sufficient to sustain a column of melted lava even at the summit of the peak of Teneriffe, which is 12,000 feet above the sea; and that such temperature is attained is evident from its effect in melting metals exposed to its influence.—Steam, as already remarked, is one of the most abundant products of volcanoes, and it is notable that the situation of these is generally near the sea or accessible to other large bodies of water; and in the vicinity of extinct volcanoes are usually found indications of ancient lakes or bays from which the water has disappeared. But, as remarked by Prof. J. D. Dana in his observations on the volcanoes of the Sandwich islands, the prodigious volume of atmospheric water absorbed through the porous lava of which the volcanic mountains are composed, may of itself afford sufficient steam for propelling the melted matters upward even to the summit of cones 3 miles high. An excellent illustration of the power of steam thus dispersed to produce such an effect is afforded upon a small scale in the explosions which take place in the tall blast furnaces used for smelting iron, when these are too rapidly heated before the mortar used in the mason work has become thoroughly dry. Of the active volcanoes remote from the sea, some of the most important are Sangay and Fragua of the Andes group, the one 112 and the other 156 miles from the coast. In central Asia the two volcanoes of Pe-shan and Ho-tcheou, in the Thian-shan mountains, are about 1,500 miles distant either from the Arctic or Indian ocean. —The quantity of volcanic matter brought to the surface during the eruption of volcanoes is often wonderful for its magnitude; and among the most striking examples are the great beds of lava and ashes under which Herculaneum and Pompeii were buried, and the formation in a short time of the mountain of Jorullo in Mexico in 1759, and that of Monte Nuovo in 1538, already referred to. The currents of lava which flowed for two years, commencing in 1783, from the Skapta Jokul in Iceland, extended in one direction 50 m. and in another 40 m., with breadths respectively of 15 and 7 m. The lava covered a large portion of the surface over which it flowed to the depth of 100 feet, and in the valleys sometimes attained a depth of 600 feet. Its total bulk has been estimated at

21 cubic miles. The lava currents of Vesuvius in 1737 have been estimated at over 33,580,000 cubic feet, and in 1794 at about 46,000,000; and those of Etna in 1669 at about 94,000,000 cubic feet. The eruptions in the Sandwich islands have also been remarkable of late years for their enormous quantities of lava. One of the most noted of these is Mauna Loa in Hawaii. (See MAUNA LOA.)—Volcanoes vary greatly in the frequency of their eruptions, and the same volcano is generally very unequal in its periods of activity and quiescence. Periods of inactivity extend to any time, and at Ischia an interval of 17 centuries between two successive eruptions is recorded. Some volcanoes however continue almost incessantly in action. This is especially the case with Stromboli, which for full 2,000 years has been burning and sending forth lava which hourly ascends and overflows the sides of the crater. The volcano of Rancagua in Chili is of similar character. The most active of all known volcanoes is Sangay, a mountain S. E. of Quito, 17,000 feet high, which has been in eruption ever since 1728, and every quarter of an hour exhibits the greatest quantity of fiery and widely luminous eruptions of scoriæ. The rapidity of its explosions sometimes causes a continuous roar, which is so loud that it has been heard at a distance of 348 geographical miles.—The great majority of volcanoes, active and inactive, are near the coast of the Pacific ocean and upon its islands, including Australia and New Zealand. This ocean may in fact be regarded as a vast basin bordered by an almost continuous line of recent and extinct volcanoes, and of rocks of igneous origin, and owing its conformation to subterranean movements, of which the volcanic outbreaks are the exponents. As enumerated by Humboldt, the total number of volcanoes in action upon the globe during the last 100 years amounts to 225, and the total number extinct and active to 407, which are distributed as follows:

Regions.	Active.	Total.
Europe	4	7
Atlantic islands	8	14
Africa	1	3
Continental Asia	15	25
Asiatic islands	110	189
Indian ocean	5	9
South sea	26	40
America	56	120
Total	225	407

The actual number no doubt greatly exceeds these figures, especially in the islands of the Pacific, very many of which are of volcanic character; and in the vast archipelago around Borneo, from the Nicobar islands to the Philippines, it is stated by M. Laugel in the *Revue des deux mondes*, xiii. 353, that the number of volcanoes is fully 900. Java alone is said by F. Junghuhn to contain 46 and Sumatra 19. Nearly all the volcanoes are found within 30° of the equator; and the others are scattered over all latitudes, even to Mt. Erebus in lat. 77° 32′ N. In America they are most numerous along the range of the Andes, upon which are found the highest volcanic peaks on the globe. The most elevated of these is Cotopaxi, the summit of which is 18,858 feet above the level of the sea.* Few of the volcanoes of America are near the Atlantic. Three are met with in the chain of the Lesser Antilles in the West Indies, and a few in Central America and Mexico are not very remote from the coast; but the great majority, from the southern extremity of South America to the polar regions, are near the Pacific. In the United States, the only volcanoes are found near the coasts of Oregon and California, and these have never been known as remarkably active. The Rocky mountains exhibit indications in many places of ancient volcanic action. Fisher's peak in Arkansas appears to be an extinct volcano. Central America contains 18 active volcanoes, and Mexico 5. In Europe, the chief volcanic district is that of Italy, Sicily, and the neighboring islands, containing the active volcanoes of Vesuvius, Etna, Stromboli, &c. Another is that of the Grecian archipelago, in which the most active volcano is Santorin on the island of Thera. In the Atlantic ocean are many volcanic islands, of which the most remarkable are Iceland, Teneriffe, and Pico of the Azores. Others of the Azores and of the Canaries, and other islands off the coast of Europe and Africa, exhibit indications of having formerly been volcanic. Between Cape Palmas on the W. coast of Africa and Cape St. Roque on the E. coast of South America, in the narrowest part of the ocean, is a tract frequently disturbed by earthquake shocks, and supposed to be of volcanic character beneath the sea. It is traced over about 9 degrees of longitude and 3 or 4 degrees of latitude. The bottom presents great irregularities of surface, protruding upward in peaks between which are deep depressions. Many volcanoes, both active and extinct, are near the inland seas in the S. W. part of Asia. The volcanic action in this region would seem to have been more energetic in ancient than in modern times; but on the S. and E. coasts and throughout the islands of this portion of Asia is found the most active volcanic district upon the globe. Although in the above table Africa is said to contain only one active volcano, many have of late years been discovered in the mountains of the Moon, which extend N. and S. near the E. coast of the continent. An eruption of one of these, called Jebel Dubbeh, occurred in May, 1861.—Sir John Herschel notices two striking features connected with active volcanoes. The first is their tendency to a linear arrangement when insular; instances of which he cites in the Aleutian islands, where 23 active volcanoes lie almost precisely in a right line of 900 geographical miles in length; also through the Kurile islands, from Kamtchatka to Yesso in Japan, 600 miles, which might be prolonged 540 miles northward along the range of other volcanoes in Kamtchatka; those of the Ladrone islands along a line extending 420 geographical miles; and those of Java, Sumbawa, and Flores, upon a straight line of 1,080 geographical miles. The second feature is that already noticed of the occurrence of volcanoes near coast lines.—Of the theories to account for the heat which produces volcanic action, that known as the chemical hypothesis proposed by Sir H. Davy, and afterward modified by Dr. Daubeny, has been most generally received. Davy supposed that the metallic bases of the various earths and alkalies, of which volcanic products are in great part composed, might exist in the interior in an isolated condition, ready to combine rapidly and with violent chemical action with oxygen presented to them in water and atmospheric air, that might penetrate the fissures. This would be sufficient to produce great heat and violent combustion. The variety of elements present, reacting upon each other, would give rise to successive decompositions and recompositions, the volatile products, such as the combinations of sulphur with oxygen and with hydrogen, of nitrogen, hydrogen, and chlorine (the last derived from sea salt, and the first from atmospheric air), escaping through fissures, and the confined steam not decomposed breaking open by its elasticity the surface of the earth and forcing upward the fluid matters. To account for these operations being kept up continuously, Lyell suggests that the hydrogen set free when the water is decomposed by contact with the metallic bases, may remain confined in the interior, possibly in a liquid form, under intense pressure; and afterward in the movements that take place it might come in contact with metallic oxides at a high temperature, and reduce these, on the same principle that potassium is produced in the common gun barrel process. Admitting the hypothesis that the interior of the earth is in a fused condition, others have argued that changes of temperature affecting any of the outer portions would necessarily disturb the equilibrium of these portions, and produce phenomena such as those exhibited by volcanoes. The changes of temperature may, as suggested by Mr. Poulett Scrope, arise from the accumulation of sediments upon the bottom of the ocean, which act as a new coat to prevent radiation of heat and cause its increase in the localities thus covered. This hypothesis, it is obvious, would not entirely take the place of the chemical theory, the subsidiary effects still resulting from a great variety of chemical reactions.—The following are among the principal authorities on the subject of volcanoes: the papers of Sir H. Davy on the "Phenomena of Volcanoes," in the "Philosophical Transactions" (1828); Daubeny on "Volcanoes;" Poulett Scrope's "Considerations on Volcanoes," &c.; Darwin, "Transactions of the Geological Society," "Geology of Volcanic Islands," and "Geology of South America;" Von Buch on the "Canary Islands;" Humboldt's "Cosmos," "Travels," and "Treatise on Rocks;" J. D. Dana, "Geology of the American Exploring Expedition;" W. Hopkins, "Researches in Physical Geography" (London, 1839-'42), also "Philosophical Transactions" (1839), and "On the Phenomena and Theory of Volcanoes;" report of the British association for 1847; Bischof "On Mineral Waters;" H. Abich, *Ueber die Natur*, &c.; S. von Waltershausen, *Atlas de l'Etna*, and *Ueber die vulcanischen Gesteine*, &c. The subject is also discussed in many of the geological treatises, especially in those of De la Beche, Lyell, D'Aubuisson, and John Phillips.

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* Lahama, a volcanic mountain in Bolivia, is said to be 22,350 feet high; and Aconcagua, in Chili, 23,000 feet high, is probably not of volcanic character, though often reputed as such. (See ANDES, vol. i. p. 541, note.)

VOLE. See SHREW.

VOLGA (anc. *Rha*), a river of Russia, the longest in Europe. It rises on the plateau of Valdai, in the western part of the government of Tver, near the head waters of the Düna, in lat. 57° N., long. 33° E., flows in a mostly eastern and then southern direction, passing by the towns of Tver, Jaroslav, Kostroma, Nijni Novgorod, Kasan, Simbirsk, Samara, Saratov, and Astrakhan, capitals of the governments of the same names, and near the last named town falls into the Caspian sea by a great number of mouths. Its length is about 2,000 m., and its total fall is little more than 600 feet. Its basin is estimated at upward of 500,000 sq. m. Its principal affluents from the right are the Oka and the Sura, and from the left the Tvertza, Mologa, Sheksna, Kostroma, Unsha, Vetluga, Kama, Samara, and Irgis. Being connected by means of numerous canals with the Baltic and White seas, it forms the great artery of communication for European Russia, though its navigation is frequently interrupted by sand banks and changes of its channel, and obstructed by ice during half of the year. It abounds in fish, including salmon and sturgeon, which form an important article of export.

VOLHYNIA (Pol. *Wolyn*), a government of West Russia, formerly a province of Poland, bounded N. by Grodno and Minsk, E. by Kiev, S. by Podolia, S. W. by Galicia, and W. by Lublin; area, 27,540 sq. m.; pop. in 1858, 1,528,328. The surface in general is level or undulating, and diversified in some places by hills covered with pine forests, and in the N. with peat moors and morasses. In the S. some low offsets of the Carpathian range enter the government from Podolia. There are no large rivers; the northern Bug forms the W. boundary, and the principal other streams are the Styr and Horin. The soil is extremely rich, and there is no other part of the empire where agriculture is in so flourishing a condition. The chief productions are grain, hemp, flax, linseed, hempseed, hops, tobacco, and live stock. Bog iron, saltpetre, building stone, millstone, limestone, porcelain clay, and potters' clay are the most important minerals. The manufactures are increasing in importance, and include leather, glass, earthenware, paper, potash, tar, and charcoal. Zhitomir, the capital, Berditchev, and Dubno are the principal towns.

VOLK, Wilhelm, a Prussian author and mystic, born in Berlin in 1804. He was educated at Göttingen, and in 1838 became a member of the council of Erfurt, which office he still holds. Though of Protestant family and education, he early devoted his attention to the study of the Roman Catholic faith, and especially to the doctrines and teachings of the mystics. At the time of the affair of Cologne (1838) he defended the archbishop. He subsequently published a work entitled "The Ecstatic Virgins of the Tyrol," in which he endeavored to explain the mystic phenomena by analogies drawn from the nature of the human soul. Since 1845 he has written under the *nom de plume* of Clarus, and has published a "History of Spanish Literature during the Middle Ages," "Sweden, Ancient and Modern," a "Manual of Italian Literature," and two pamphlets which have led to numerous replies, viz., "Avowals of a Protestant," and "Apprenticeship of Faith." He has also edited, translated, and republished the works of eminent mystic writers of the Catholic church; among others the "Complete Works of St. Theresa," the "Mystic City" of Maria d'Agreda, two volumes of the "Meditations" of St. Hildegond, and the "Spiritual Revelations" of St. Brigitta. In 1855 he became a Roman Catholic.

VOLKMANN, Alfred Wilhelm, a German physiologist and physician, born in Leipsic in 1801. He was educated at Leipsic, and from boyhood devoted himself to the study of natural science and medicine. He received his doctor's degree in 1826, in 1828 became a fellow of the medical faculty of Leipsic, in 1834 professor extraordinary in the university of that place, and in 1837 professor of physiology at Dorpat. He acquired considerable reputation by his *Anatomia Animalium* (Leipsic, 1831–'3), followed by his *Neue Beiträge zur Physiologie des Gesichtssinnes* (1836), *Die Lehre vom leiblichen Leben* (1837), and, in conjunction with F. H. Bidsler, *Die Selbständigkeit des sympathetischen Nervensystems* (1842). In 1843 he was recalled to Germany as professor of physiology at Halle, to which was subsequently added the chair of anatomy; and on the death of Meckel he was made conservator of the anatomical museum collected by that eminent anatomist. Dr. Volkmann has been occupied for some years with investigations on the irritability of the muscles, has made valuable contributions to Wagner's "Physiological Dictionary," and in 1850 published a treatise entitled *Hämodynamik.*

VOLNEY, Constantin François Chassebœuf, count de, a French author, born at Craon, Feb. 3, 1757, died April 25, 1820. He was educated at the colleges of Ancenis and Angers, and subsequently studied medicine and the Arabic and Hebrew languages at Paris. In 1783 he inherited a fortune, and in the same year set out for the East. He spent some months in a convent on Mt. Libanus in the study of Arabic, travelled two years in Lower Egypt and Syria, returned to France in 1787, and soon after published his *Voyage en Syrie et en Égypte.* This was at once received as the most graphic and complete description of Syria and Egypt that had appeared. About the same time he was named director-general of commerce and agriculture in Corsica, but resigned the position upon being elected deputy to the national assembly for the *sénéchaussée* of Anjou. In 1791 he retired to Corsica to cultivate a property which he had purchased there, but the insurrection headed by Paoli compelled him to quit the island early in 1793. During this sojourn he made the acquaintance of Napoleon Bonaparte, then an officer of artillery. In the spring of 1793 he was sent to prison by Robespierre as a royalist, and remained in confinement 10 months. He was appointed professor of history in the newly established normal school in 1794, and on its suppression in 1795 came to the United States, and remained here until 1798, when he returned to Europe. He is supposed to have taken part in the contrivance of the revolution of the 18th Brumaire, which placed Bonaparte at the head of affairs, and was made senator. When Bonaparte assumed the imperial title, Volney offered to resign his seat in the senate, but was prevailed upon to retain it, though he seldom attended the sessions, and when he did so voted with the opposition. He accepted however the titles of count and commandant of the legion of honor. He voted in favor of the decree for the deposition of Bonaparte in April, 1814, and in June following was elevated to the peerage by Louis XVIII. In addition to his work on Egypt and Syria, he wrote *Les ruines, ou méditations sur les révolutions des empires* (Geneva, 1791); *La loi naturelle, ou catéchisme du citoyen Français* (Paris, 1793); *Simplification des langues orientales, ou méthode nouvelle et facile d'apprendre les langues Arabe, Persane et Turque, avec des caractères Européens* (1795); and *Tableau du climat et du sol des États-Unis d'Amérique* (2 vols. 8vo., 1803). In his *Ruines* he first avowed those infidel opinions to which his name now owes its chief notoriety. Christianity, as well as all other religious beliefs, he considered merely a system of symbols, very much like that developed by Dupuis in his *Origine des cultes*, a work with which Volney was probably acquainted, though at that time it was still in manuscript. In his *Histoire de Samuel, inventeur du sacré des rois* (1819), published just before the coronation of Louis XVIII., he showed little respect for either the prophet or the Hebrew Scriptures.

VOLOGDA, a northern government of European Russia, bounded by Olonetz, Archangel, Tobolsk, Perm (from which it is separated by the Ural range), Viatka, Jaroslav, and Novgorod; area, 148,240 sq. m.; pop. in 1858, 951,593. The surface is an undulating plain, mostly covered with woods, marshes, and sands, except in the E., where it is mountainous, being occupied by the Ural and its offshoots. It is watered by the Petchora, Mesen, Dwina, Sukhona, Vitchegda, Pinega, and Vashka, tributaries of the Arctic ocean or of the White sea. The climate is very severe, and only a small portion of the soil is cultivated, producing chiefly rye, barley, hemp, flax, and pulse. The chief mineral products are iron, copper, salt, granite, and marble. Horses and cattle are reared, and bears, wolves, and deer are hunted. The inhabitants consist of Russians, Voguls, Samoyeds, and some other tribes; many of them are uncivilized. Furs, timber, turpentine, pitch, and other raw products are exported into the neighboring governments. There are numerous manufactories, carried on chiefly by the government in the capital, Vologda, a town of about 14,000 inhabitants, on the Sukhona. Other important towns are Ustiug Velikoi and Totma, on the same river, and Velsk, on another affluent of the Dwina.

VOLSCI, an ancient people of central Italy, according to their language akin to the Umbrians. They inhabited the southern part of Latium, extending E. beyond the Liris (Garigliano) and W. to the Tyrrhenian sea, on the shore of which their capital, Antium, formed a considerable seaport (now Porto d'Anzo). From an early period of the history of Rome they were engaged in almost continual hostilities with that republic, until they were finally subdued, in 338, by L. Furius Camillus, the grandson of the dictator, when they disappeared from history.

VOLTA, Alessandro, an Italian physicist, born in Como, Feb. 18, 1745, died there, April 5, 1827. He belonged to a noble family, and early showed a taste for science, having at the age of 18 paid attention to the subject of electrical phenomena. In 1775 he constructed a kind of electrical machine, which he called the *electrophorus*, consisting of two circular plates of metal having between them a plate of resin; and in 1782, in an effort to improve this instrument, he invented the electrical condenser, by which small charges of electricity were accumulated until they reached a considerable amount. In 1774 he had been made rector of the gymnasium and professor of physics in Como, but in 1779 was transferred to the university of Pavia. Further investigations in chemistry and electricity led him to construct the electrical pistol, the eudiometer for testing the amount of oxygen in the air, and the lamp with inflammable air. But his reputation was chiefly founded on his invention of the instrument called from him the voltaic pile. This consists of a series of "galvanic circles," each composed of a disk of zinc and another of copper, separated by a disk of paper, card, or cloth, soaked in water or some other fluid. By connecting a number of pairs of these circles, electricity may be developed to an indefinite extent. (See Animal Electricity.) In 1782 Volta travelled in Germany, Holland, England, and France, and is said on his return to have introduced from Savoy into Lombardy the culture of the potato. In 1796 he was one of the deputies sent by the citizens of Pavia to solicit the protection of Bonaparte, who treated him with the highest honor, and when first consul invited him to Paris to make experiments with his pile. In 1802 he was chosen a member of the French institute, was afterward delegate of the university of Pavia to the congress of Lyons, and was created by Napoleon count and senator of the kingdom of Italy. He was one of the first members of the Italian institute. In 1804 he resigned his professorship, and in 1815 received from the emperor Francis the appointment of director of the philosophical faculty in the university of Pavia. Antinori superintended an edition of his works (5 vols., Florence, 1826).

VOLTAIRE, François Marie Arouet de, a French philosopher, poet, and wit, born in Paris (not at Châtenay, a village near Sceaux, as was long supposed), Feb. 20, 1694, died there, May 30, 1778. At the time of his birth he was so feeble of frame that he was not expected to live. His parents were the sieur Arouet, who filled the office of treasurer in the chamber of accounts, and Marie Catherine d'Aumart, of a noble family of Poitou. The name Voltaire is said to have been derived from a family estate that belonged to the mother, it being the custom in those days for the younger children of wealthy commoners to take the name of the estate, while the eldest assumed the family name. But others have remarked that Voltaire is but the anagram of Arouet *l. i.* (*le jeune*), *u* and *v* and *j* and *i* being respectively interchangeable. His godfather had been a certain abbé de Châteauneuf, who was also his first teacher, and who, being of that class of churchmen which preferred the society of the *beaux esprits* to the services of religion, early indoctrinated him in the lively but sceptical literature then coming into vogue. The child was taught to read in the *Mosaïde*, a poem in which Moses is described as an impostor, ascribed to Jean Baptiste Rousseau; and as early as his 12th year he began to compose for himself. His first verses were some begging lines addressed to the dauphin in the name of an invalid, and they were so clever as to attract toward him the attention of the famous Ninon de l'Enclos, then in her 90th year, but still a wit, and to some extent a reigning influence. She was sufficiently pleased with the boy to leave him a legacy of 2,000 francs for the purchase of books. At the college of Louis le Grand, whither he was sent to school, the Jesuits soon discovered both his extraordinary talents and the freedom of mind which induced one of them to predict that he would one day become the coryphæus of deism. On his departure from college, the boy was placed in a school of jurisprudence, with a view to the subsequent purchase of a judicial office; but he evinced little love for legal lore, and much preferred the making of verses to the reading of Justinian. Beside, the abbé de Châteauneuf had already introduced him to the brilliant and licentious society which his mistress Ninon frequented, and the leading spirits of which were the Vendômes, the Contis, the La Fères, the Sullys, and the Chaulieus. It was an assemblage of loose lords, libertine abbés, satirical rhymers, and voluptuous women, who, already reacting against the severe asceticism brought into the court of Louis XIV. by Mme. de Maintenon, anticipated the morals and the literature of the regency, and practised without restraint according to the rules of Epicurus, while they delighted each other with jovial mockeries at all established institutions, religious, political, and social. His law studies were of course interrupted, and this fact, together with the composition of a poem in 1712 on the decoration of the choir of Notre Dame, led his father to connect him with the embassy of the marquis de Châteauneuf to the United Provinces. It was supposed that absence from Paris might detach him from his injurious associations, but at the Hague his dissipations passed from the trivial to the disorderly. An intriguing woman, named Dunoyer, accused him to the ambassador of the seduction of her daughter, though she was herself suspected of having favored the crime, and, to make money out of an infamous speculation, published the love letters of the young offenders. The scandal was greater than Voltaire could bear, and he was obliged to return to Paris. His father, of course, received him with frowns and reproaches, and pardoned him only on condition that he should resume his studies with a notary. A friend of the family, M. de Caumartin, compassionating his sufferings, procured permission for him to pass a few months in his country residence at St. Ange. This was only a new means of exciting his passion for literature. The father of this friend, an old and well instructed bishop, had lived in his youth with those who still remembered Henry IV. and Sully, and the stories he told of the times of the liberal king filled the boy with much of his own enthusiasm. He began to meditate two of his most important works, the *Henriade* and the history. On his return to Paris, however, he found himself suddenly and strangely enough arrested and transferred to the Bastile. Louis XIV. had just died; satirical and witty pamphlets celebrated the event as a happy deliverance; and some of the lampoons or epigrams being ascribed to Voltaire, though he was barely 20 years of age, the regent issued orders for his confinement. It was for him a misfortune which disguised blessings. During the year he spent in prison, he was not only separated from his usual distractions, pleasures, and gallantries, but he was enabled to devote his hours to serious labors. He wrote a part of the *Henriade*, and completed a tragedy, begun some years before, with the title of *Œdipe*. Pleased with the performances, the regent released him, and added to the favor a considerable donation. "Thanks, your royal highness," said Voltaire, "for your care of my board, but no more of your lodgings, if you please!" *Œdipe* was soon afterward (1718) produced on the stage, and won instantly a most brilliant success. The critics thought they saw in the young writer a worthy disciple and continuator of Corneille and Racine; the public crowded the theatre; and the good father himself relented, and was reconciled to the career of author which the son had chosen. The play was certainly an extraordinary work, abounding in impressive scenes, lofty characters, and a most fervid and beautiful declamation; it has since kept possession of the stage; but tried by the standards of pure tragedy, it was rather a series of impassioned and eloquent dialogues than a drama. Its faults, however, were those of nearly all French classics, while its merits were marked and original. The fame it secured the writer won for him also new introductions into society, new companions, new festivals, and new gallantries. Nevertheless, he labored much, and he began to travel much. He passed from chateau to chateau, to visit illustrious friends; he journeyed to Holland, to study at Amsterdam; passed some time at Brussels, and sought out Jean Baptiste Rousseau in his place of exile. Yet in the midst of these diversions he found time to compose two new tragedies, *Artémire* and *Mariamne*, and a comedy, *L'indiscret*, and to complete the grander labor of the *Henriade*. The tragedies met with indifferent success in the representation, and the comedy was a failure. With all his vivacity, wit, knowledge of the world, and adventure, the genius of Voltaire was unequal to those ludicrous combinations of events and characters which genuine comedy requires. But his epic, suggested by the reign of Henry the Great, having been purloined, altered, and published under the title of *La ligue*, by a rascally copyist named Desfontaines, became rapidly popular. The sensation it produced, even in the mutilated and factitious form in which it had been given to the public, compelled the author to hasten his own final revisions. Certain bold sentiments of philosophy and tolerance, however, scattered among the poetic beauties, aroused the suspicions of the clergy, and he could not procure the license for printing. Though he offered to dedicate the poem to the king, the obstacles put in the way of its appearance were found nearly insuperable. While he was yet struggling to remove them, an incident occurred which suddenly changed the tenor of his life. At the table of the duke de Sully he took part, in a manner too free and spirited, in a discussion that arose, and formally contradicted a chevalier Rohan-Chabot, who received the impertinence in high dudgeon. "Who is this," asked the chevalier, warmly, "that presumes to talk so loud?" "A young man," replied Voltaire, "who does not bear a high name, but who is capable of honoring that which he bears." As the name of the chevalier was his principal distinction, he felt the sly reproof, and some days afterward avenged himself on the incautious youth, by causing his lackeys to call Voltaire from dinner, when he was again a guest of the duke, and to administer a pretty severe chastisement with rods. In vain the wrathful poet appealed to the duke to resent the indignity inflicted upon a friend and a guest; blood was more important than talent; and the young commoner was left to his own protection. Shutting himself up in his chamber, he practised day and night the art of fencing, and when he thought himself sufficiently apt, he sent a challenge to the offending knight. It was accepted, but in the mean while the relatives of the latter procured a royal order for the imprisonment of the wit in the Bastile. At the end of 6 months, through some kindly intervention, he was set free, but on the condition that he should quit France. Making a furtive visit to Paris, in order to meet if he could the chevalier who had been the cause of his incarceration, he was unsuccessful in the pursuit, and departed for England (1726). His residence there, which continued for 3 years, had a controlling influence over his future course of thought and destiny. He had made, in one of his journeys, the acquaintance of Lord Bolingbroke, and by him was introduced into that society of free-thinkers which was then the reigning school of literature. His own deistical principles were confirmed by the speculations of Collins, Tindal, and Wollaston, and the polished verse of Pope. But his first and most novel impressions were derived from the great spectacle presented by the enormous activity and orderly freedom of England. He saw a great nation devoting its energies to vast labors of practical utility, and discussing with the utmost latitude the action of government and the principles of religion. All classes seemed to vie with each other in doing homage to the freedom and grandeur of the human mind. Locke had been employed in high offices; Swift and Prior had been the companions of ministers; Addison a secretary of state; and the remains of Newton were escorted, as he himself witnessed, by the greatest dignitaries of the land, amid the sorrows of the multitude, to the splendid tomb dedicated to heroes and kings. How different from France, where under Louis XIV. her noblest thinker, Descartes, could not find a grave! Next to this spectacle of English society itself, and his intercourse with the polished free-thinkers, what chiefly interested Voltaire in England was that physical philosophy which, under the teachings of Newton, was pushing the antiquarian, scholastic, and moral sciences into the shade. He became as earnest a student as he could be of mathematics, astronomy, and the experimental branches of knowledge. He saw in these, not so much the comprehensive truths, as the instrumentalities they furnished for assailing the moral systems of the Jesuits and other religionists. From his youth Voltaire had made war, more or less open, upon the prevailing tenets. In the closing lines of his "Epistle to Urania," *Le pour et contre*, addressed to Mme. de Rupelmonde and her circle (1715), he thus sums up his opinions of Christ and Christianity:

> Ses exemples sont saints, sa morale est divine,
> Il console en secret les cœurs qu'il illumine;
> Dans les plus grands malheurs il leur offre un appui;
> Et si sur l'imposture il fonde sa doctrine,
> C'est un bonheur encore d'être trompé par lui.

Christianity, though excellent, was still an imposture, whose place a new philosophy ought to supply; and no better supports for this philosophy could be found than the bold, seductive, and beautiful generalizations by which Newton had discovered and demonstrated at once the immensity and the unity of the creation. Voltaire's social success in England may be referred to as contributing to his confidence in his own powers as well as in his schemes of thought. The brothers Walpole, then at the head of affairs, persuaded George II. and his ministers to head the subscription for a splendid impression of the *Henriade*, and the whole aristocratic society followed in their wake. He rose speedily to the summit of renown as an epic poet; he was courted in all the higher circles; and when he returned to France he found himself a sort of national idol among the French, whose tendencies and spirit, unconsciously to themselves perhaps, he so well expressed. His admiration of the English and their polity he described, soon after his return to his native country (1728), in his *Lettres sur les Anglais*, in which he exhibited the operations of constitutional government so as to give a powerful impulse to the love of liberty which was already abroad. That practical talent of the English which leads to prosperity in trade was not forgotten by him in practice; for he invested his literary gains in lotteries, in speculations, and in mercantile adventures to the coasts of Africa, whereby he made a considerable fortune. Inspired by the traditional examples of ancient heroism, he next wrote the tragedy of "Brutus," which was not however a success that satisfied his ambition or vanity. Fontenelle and La Motte advised him to quit the line, and he replied with the tragedy of *Zaïre* (1730), which, though written in 22 days, was his best and most pathetic work. It was received by the public with unbounded applause. Even in these poetic attempts he could not suppress an occasional inkling of his deistical and liberal principles, and it was soon suspected that his praises of the constitution, government, religious tolerance, and physical philosophy of England were only masked assaults upon the monarchical and religious systems of the continent. His "Letters" were consequently ordered to be publicly burned, and he himself escaped *lettres de cachet* only by a speedy retreat to Cirey, near Vassy in Champagne. This was the chateau of the marchioness du Châtelet, a lady celebrated for her love of mathematics and abstruse sciences, and who read Leibnitz and Newton in the original Latin. During the several years of his residence with Mme. du Châtelet, a connection which Lord Brougham defends as entirely Platonic, he wrote his *Élémens de la philosophie de Newton*, in which he explained the theories of the great discoverer with clearness, eloquence, and learning, though not always with accuracy. He composed, in pursuance of its method, a treatise on fire; but the bent of his genius lay rather in the domain of fancy and imagination than of fact. He always turned with delight to works in which his gayety, his wit, his sarcastic spirit, his fertility of invention, and his deep interest in the life and movements of mankind might find their full scope and display. The fruits of his activity at this time were his *Alzire* (1736), *Mahomet* (1741), dedicated to the pope, *Mérope* (1746), and a multitude of lighter pieces, among which the pen hesitates to write *La pucelle*, the most disgusting and ribald of his performances. He also wrought upon his most important work, the *Essai sur les mœurs et sur l'esprit des nations;* collected materials for his *Siècle de Louis Quatorze;* and amused his leisure in the production of plays for a private theatre, which he built and managed.—Voltaire's residence at Cirey was marked by the opening of his correspondence with the prince royal of Prussia, afterward Frederic the Great. It was begun by the prince, who admired both his genius and the audacity with which he had assailed the government and clergy of France. Voltaire, flattered by the notice, expressed the highest admiration of the prince, whom he pronounced a Trajan and Pliny combined. When Frederic succeeded to the throne of Prussia, he asked Voltaire to visit him (1740); the poet declined at first, preferring the society of Mme. du Châtelet to the companionship of a monarch who was also a busy warrior; but on the death of the lady (1749) he was more inclined to accept the invitation. He had lived altogether 13 years at Cirey; yet he did not spend the whole of his time in that retreat. Many visits of greater or less length were made by him, in company with the marchioness generally, to different cities and towns. In 1736 the scandal occasioned by his *Mondain* compelled him to spend several months in Brussels. Twice he repaired to Berlin, once in 1740, to see his beloved Prince Frederic, and again in 1744, on a political mission for preserving the peace of Europe, with which he had been charged by the French cabinet. For a while also, in 1746, he removed to Paris, where he wrote and brought out other tragedies, trained Le Kain in the art of the actor, was chosen a member of the French academy, and received the appointment of historiographer of France from Louis XV. But the favors and smiles of the court did not continue long; his cynicism displeased the mistress of the king, and the Jesuits always worked against him. Crébillon was set up as a rival author; the court adopted the new favorite, and Voltaire, in a fit of disgust, quitted Paris for Berlin. Frederic received him with transports of joy (1750). "Astolpho," he says, "was not better received in the palace of Alcina." He was lodged in the apartments of Marshal Saxe; the king's cooks, servants, and horses were placed at his disposal; he was granted a pension of 20,000 francs, and he and the king studied together for two hours a day, while he was welcomed to the king's table in the evening. At first the connection seemed a charming one. Voltaire completed his *Siècle de Louis Quatorze*, and Frederic wrote verses and essays which he submitted to the criticism of the poet. But both were imperious, both irritable, both witty, while the one was a king and the other only a poet. Distrusts soon arose, bickerings followed, and in the end there was a violent rupture. Other favorites, Maupertuis, a philosopher, whom Voltaire lampooned under the name of Dr. Akakia, and Lamettre, a physician, widened the breach. At length Voltaire resolved to escape, and, carrying some of the king's poems with him, he was arrested at Frankfort under circumstances of considerable annoyance and disgrace (1753). All friendship was then at an end, and the indignant poet abused the monarch afterward as freely as he had once flattered him. Strange to say, their correspondence was subsequently renewed, and though they criticized each other severely for the past, each thinking himself in the right, they resumed many of their old reciprocal flatteries.—Not caring to go back to Paris, Voltaire purchased an estate near Geneva, in Switzerland, which he called Les Délices (1755), and there, amid the most beautiful scenery of nature, prosecuted once more his literary projects. But he became involved in disputes with his more rigid Swiss neighbors; the publication of the abominable poem of *La pucelle* created many enemies; forged verses in ridicule of Louis XV. and Mme. de Pompadour ascribed to him started new rumors of *lettres de cachet;* and the innumerable epigrams made upon him by the gadflies of literature, whose stings he returned with more than their own sharpness and venom, embittered his life. Like most wits he was indeed peculiarly sensitive to ridicule, and throughout his life more or less involved in petulant controversies with writers who ought to have been held beneath his notice. The only exception, perhaps, was that strange compound of sensibility and sense, Jean Jacques Rousseau, with whom he tried to maintain a friendship, but whose whimsical irritability was more than any patience could endure. Voltaire, however, had never restrained in private the mockeries and jests for which the oddities of his friend's character and the absurdities of his speculations gave but too frequent occasion. These, coming to the ears of the object of them, provoked recriminations and a final rupture. In 1762 he removed to an estate which he had purchased at Ferney, on French territory, but near the Swiss confines, so that he might easily escape from one to the other in the event of hostilities on the part of either. His books and his speculations in the funds had made him enormously rich, and he delighted in spending his fortune in the improvement of his property, in constructing better habitations for the poor laborers, in befriending indigent literary men, and in entertaining the hosts of visitors which his eminent fame attracted to his retreat. Nothing however acquired him greater renown than his strenuous efforts in behalf of oppressed Protestants. Fugitives from the civil troubles of Geneva and other towns always found an asylum beneath his roof. He even built a Christian church at Ferney, which he dedicated to God, but which the ecclesiastical authority refused to recognize and consecrate. All the while suffering from physical disease, his spirit was still untamed, and his literary fertility was even more exuberant than it had been in his youth. The acknowledged patriarch of letters, he omitted no exertion to maintain his place, and continue the inspiration which he had given to the literature of his age. He had become, in a sense, the founder of a new sect of thinkers and writers, who took the name of the encyclopædists, and who, differing from him in many particulars, were yet glad to be sheltered under the auspices of his fame. The idea of the great work, the *Encyclopédie*, in which this school embodied its schemes, was a substantial exposition of every thing which human genius had conceived or created since the beginning of society. (See Cyclopædia, and Diderot.) The very audacity of the enterprise, apart from the ability and learning with which it was edited, gave it a high degree of renown. But it did not confine itself to a rigid catalogue of what had been effected in the sciences, nor to a purely historical treatment of the progress of philosophy, literature, and art; it aspired to the inculcation of doctrine and the development of ideas; and it sometimes insinuated and sometimes openly preached sentiments of philosophical doubt, of scepticism, of materialism, and even of atheism, though the latter was not with the approbation of Voltaire. He had ever been a decided deist, and he rebuked the philosophy of his age, which tried to banish God from the universe. Voltaire's last act, performed in his 85th year, was a visit to Paris, whither he carried a new tragedy, *Irène*, and where he was received by all classes with unparalleled demonstrations of honor. His carriage was drawn by the people; his rooms were crowded with the grandees of politics, society, and letters, from morning to night; and his visits to the theatres were ovations, in which he was crowned with laurels and roses, and all the arts conspired to do him homage. He may be said, indeed, to have been drowned in an ocean of applause, or to have died of the fatigues of his own apotheosis. Among his latest words were these: "I die worshipping God, loving my friends, not hating my enemies, but detesting superstition." Impediments were raised by the French clergy to his decent burial in the parish where he expired, and his remains were carried to the abbey of Scellières, belonging to one of his nephews, where he was interred. On the stone his friends placed the simple inscription: *Ci-gît Voltaire.* The government ordered the newspapers not to comment upon his death, which was the last kick it could give the dead lion; but his old friend Frederic of Prussia caused the Berlin academy to do honor to his memory; and Catharine II. of Russia, with whom he had long corresponded, openly mourned the event.—As for the character of Voltaire, it will be, as it long has been, variously judged, and this is not the place to attempt a decision. His literary merits admit of less doubt, and posterity has confirmed the sentiment of his contemporaries, that he was the sovereign writer of his century. He was its author-king. No other writer controlled so completely the opinions of the world. Yet he was not a great thinker, not a great poet, not a great historian, not a great novelist, and not a great manager, or man of action. Of his 28 or 30 dramatic pieces, scarcely one rises to the highest line of dramatic art; his comedies like his epics are no longer read; his histories are sprightly and entertaining, but not authentic; and his essays, both in prose and verse, with perhaps the single exception of his historical disquisitions, have ceased to instruct. If we seek then for the secret of his success, we must turn to those lighter compositions, satires, tales, *vers de société*, madrigals, letters, and epigrams, in which the whole spirit of the age saw itself expressed with inimitable vivacity, grace, point, and agreeableness. He was there the master of all styles, save, in his own phrase, of the *ennuyeux*, or dull and wearisome. In delicate derision and irony he never had an equal; his understanding was clear and piercing, and perhaps the most dexterous that ever was created; his judgment, though not profound or solid, was remarkable for good sense; his wit was brilliant, glancing, and keen as a flash; and his fancy lively and inexhaustible. Seldom earnest, a mocker and jeerer, not a reformer, he yet for 60 years waged a relentless war upon blind faith, and whatever he deemed abuses. During the long battle he fired no heavy ordnance; he shook the earth with no grand artillery; but he maintained a perpetual rattle of small arms, and a flashing of rapiers and poniards, which he drove to the hilt.—Among the principal works of Voltaire, beside those we have already mentioned, we may specify his *Histoire de Charles XII., roi de Suède* (1730); *Le temple du goût* (1733), a critical and satirical production, half prose and half verse; seven *Discours sur l'homme*, imitated from Pope; *Le dictionnaire philosophique*, *Histoire de la Russie sous Pierre le Grand; Histoire du parlement; Philosophie de l'histoire; La Bible commentée;* and *Histoire de* *l'établissement du Christianisme.* Of the numerous editions of his works, the best probably is that of Beuchot (70 vols. 8vo., 1829–'34). Among the best lives of Voltaire are those by Condorcet, Mazure (1821), and Longchamp and Wagnière (2 vols. 8vo., Paris, 1826).

VOLTERRA (anc. *Volaterræ*), a town of Italy, in the district of Pisa and the late grand duchy of Tuscany, built on a height between the Era on the N. and the Cecina on the S.; pop. 4,500. It is an episcopal see, and the seat of a college and episcopal seminary. It occupies a small part of the ancient Volaterræ, one of the oldest and most important of the Etruscan cities. It adhered to the Latins in their war with Tarquinius Priscus, resisted L. Scipio in the 3d century B. C., and subsequently in the same century was reduced to the condition of a dependent ally of Rome. It was the last stronghold of Marius in Italy, and did not surrender to Sylla till after a two years' siege. Its inhabitants received the rights of Roman citizens, and were protected by Cicero from the effort made during his consulship to dispossess them of their territory by an agrarian law. There are no allusions to it in the history of the Roman empire, but after the fall of the western empire it again came into notice as a stronghold in the wars of the Goths with Narses. Of the ruins and antiquities of Volterra, the most remarkable are two of the ancient gates of the city, one, the Porta all' Arco, retaining in a perfect condition its sculptured arch, by some attributed to the Etruscan, by others to the Roman period. Many Etruscan ornaments of alabaster, coins, &c., have been found here.

VOLTERRA, Daniele Riccierelli di, an Italian painter, born in Volterra in 1509, died in Rome in 1566. He was instructed by Il Sodoma and Baldassare Peruzzi, and settling in Rome became an assistant of Perino del Vaga, then engaged upon the Vatican. He received instruction and advice from Michel Angelo, and from his designs executed several of his most important works. He is chiefly known by his series of frescoes in the church of La Trinita del Monte, in Rome, representing the history of the cross, one of which, known as the "Descent from the Cross," was esteemed one of the 3 finest pictures in Rome. This was greatly injured by being detached by the French from the wall on which it was painted; but a good idea of it can be obtained from the excellent line engraving by Dorigny.

VOLTURNO (anc. *Vulturnus*), a river of S. Italy, in the former kingdom of Naples, rising in the province of Molise, flowing S. E. and W. past Capua, and falling into the Mediterranean 20 m. S. E. from Gaëta, after a course of about 90 m. On Sept. 19, 1860, the troops of Garibaldi made an attack upon the royalist army drawn up along the bank of the river in front of Capua, and, after driving them from the town of Cajazzo, assailed the outer works of Capua, but were repulsed with loss. Two days later the royalists recaptured Cajazzo after a severe engagement, and on Oct. 1 and 2 a hard-fought battle, resulting in the utter defeat of the royalists, took place on the S. bank of the river, the king of Naples commanding in person on the one side and Garibaldi on the other.

VOLUNTEER, literally, a person who enters into service of his own accord, or who in time of war offers his services to his country. In most armies the term is applied to those officers or men who offer to take part in an enterprise of peculiar danger, as the assault of a formidable battery or the storming of a fortress, in which case they comprise what is called the forlorn hope, and the survivors receive promotion or other substantial rewards. Another class of volunteers were those bodies of citizen soldiery who came forward in Great Britain in 1794, and subsequently in 1803, when over 400,000 men were under arms, under the apprehension of a French invasion; or who in 1813–'14 enrolled themselves among the German armies to accomplish the overthrow of Napoleon, resuming their ordinary occupations after the consummation of that event. In May, 1859, in consequence of renewed fears of a French invasion, the formation of volunteer corps of riflemen was commenced in England under the auspices of government, and the organization now comprises 150,000 well equipped and drilled men, enrolled in all parts of the kingdom, and whose services, in the event of a sudden declaration of war, would be of great value to the government.—In the United States the uniformed militia, an organization which exists in each state of the Union, constitute a permanent and important force of volunteer soldiery, whose services have proved invaluable in quelling riots and protecting the public property. The term volunteer, however, applies more particularly to a class of troops which have been from time to time raised by congress for temporary purposes, and have played an important part in the military history of the country. Such troops when once enrolled are exclusively under the authority of the United States, each state furnishing a quota of the whole number called out proportioned to its population, and superintending the organization, while the arms, equipments, and uniforms are provided by the general government. A frequent feature of these organizations is the election by the men of their officers, whose commissions are granted in the manner prescribed by law in the states or territories to which they belong. The appointment of generals of brigade or division for such volunteer forces rests with the president and senate. Volunteers, after being mustered into the United States service, are amenable to the same laws, receive the same pay, and are subject to the same treatment as regular troops, the chief distinction between the two organizations consisting in the manner of appointing the officers and the shorter periods for which volunteers are usually enlisted. These are nevertheless sufficient to render the volunteer service the more popular, and during the first year and a half of the existing civil war (1861–'2), the government raised with comparative ease nearly 1,000,000 volunteers, while not more than 10,000 men were raised in the same period for the regular army. The volunteer system was first tried on a considerable scale during the war with Mexico (1846–'7), when more than 70,000 men were thus raised; and it may be considered the settled policy of the government in conducting important military operations, the regular army bearing no proportion in numbers to the volunteer force. The efficiency of volunteers as compared with regulars is however still a moot question.

VOLUSIA, an E. co. of Florida, bordering on the Atlantic, and bounded W. by the St. John's river; area, about 1,100 sq. m.; pop. in 1860, 1,158, of whom 297 were slaves. The surface is generally level, and in some parts flat and swampy. Capital, Enterprise.

VOMITING, the act of rejecting the contents of the stomach, due in great part to the contraction of the abdominal muscles, assisted by the active coöperation of the muscular walls of the organ; the diaphragm remains fixed, affording a firm surface against which the stomach is pressed by the abdominal muscles. Relaxation of the sphincter at the cardiac orifice of the stomach is necessary, as its contraction will resist the power of all the expulsor muscles combined, explaining the violent and vain efforts to vomit which all must have seen or experienced; the act is preceded by a deep inspiration, the glottis being spasmodically closed during the paroxysm. It may be produced by irritating substances applied to the mucous membrane of the stomach, the impression being conveyed by the pneumogastric nerves and the motor nerves of expiration, as in common emetics; by irritations in other parts of the body, transmitted by reflex nervous action, as in strangulated hernia, the passage of calculi, and during gestation; and by impressions received through the sensorial centres, whether emotional or sensational, as from tickling the fauces, disgusting sights or odors, and in sea sickness; even the recollection of these sensations may cause vomiting in very impressionable persons. It is a common symptom of many diseases of the stomach and intestines, and arises from sympathy in affections of many other organs; it is sometimes nervous or spasmodic. Exclusive of the treatment proper for the special disease of which it may be the symptom, effective remedies for vomiting are ice, effervescing potions, mercurials, prussic acid and various narcotics, creosote, chloroform, and ether. In many birds and some mammals, the contents of the stomach are ejected as a means of offence, as in the petrels and vultures, and the llama.

VON, a German preposition, signifying of or from, which, when prefixed to a surname, indicates that the possessor is of noble rank. In this sense it corresponds with the French *de*, and in certain cases with the Dutch *van*, which latter word does not always indicate nobility. This signification of the word is to be traced to the custom prevalent in the middle ages of calling persons of all degrees by their Christian names, with the addition of the place in which they resided. By degrees this became a prerogative of the nobility, who affixed to their baptismal names that of the castle or village belonging to them.

VONDEL, JOOST VAN DEN, a Dutch poet, born in Cologne, Nov. 17, 1587, died in 1659. While yet a child his parents removed to Amsterdam, where he passed the remainder of his life. He was brought up under humble circumstances, and did not begin the study of Latin until his 30th year, though he early manifested a taste for poetry. His parents were Anabaptists, but he himself went over to the Arminians, and finally died in the communion of the Roman Catholic church. His works, which are very numerous, consist partly of metrical translations of the Psalms, of Virgil, and of Ovid, and partly of satires and tragedies, forming 21 volumes in the best edition (Amsterdam, 1820). The most celebrated of his dramatic works are *Gijsbrecht von Amstel*, *Lucifer*, and *Palamedes*. The last named was an allusion to Barneveldt and his murder; though not published until 1625, after the death of Prince Maurice, it was adjudged treasonable and libellous, and Vondel was with difficulty saved from a severer punishment than the payment of 300 guldens. Vondel has sometimes been called the Dutch Shakespeare. His biography, by Camper, appeared at Leyden in 1818.

VORARLBERG, the westernmost district of the Austrian empire, officially included in the Tyrol, and bounded N. and N. E. by Bavaria, E. by Innspruck, S. by the Swiss canton of Grisons, W. by the principality of Liechtenstein and the Swiss canton of St. Gall, and N. W. by the lake of Constance; area, 984 sq. m.; pop. 90,000. It receives its name from a mountain ridge called the Arlberg, a branch of the Alps. It is watered by the Aach, Ill, Fussach, Lech, and Iller; produces potatoes, fruits, wine, a little grain, and great quantities of cheese; and has mines of iron and various sorts of manufactures. A large proportion of the male inhabitants leave the country every year to work during the spring and summer as house builders and masons in various parts of Switzerland and France, or to herd cattle in Swabia and Bavaria. Bregenz, the capital, at the S. E. extremity of the lake of Constance, and Feldkirch and Bludenz, on the Ill, are the principal towns.

VORONEJ, or VORONEZH, a government of Russia, bounded N. W. by Orel, N. E. by Tambov, E. by Saratov, S. E. by the country of the Don Cossacks, S. W. by Kharkov, and W. by Koorsk; area, 25,691 sq. m.; pop. in 1858, 1,930,859. The surface is undulating, with a few ridges of slight elevation, and a general slope southward. It is drained by the Don and its tributaries, the Sosna, the Voronej, and the Bityug, the Khop, and the Donetz. The principal mineral productions are iron and saltpetre; and there are considerable quantities of limestone and sandstone, suitable for building purposes. The climate is agreeable and healthful, but the winters are severe. The soil is extremely fertile, and the government is one of the most productive agricultural regions of the empire, wheat being the principal crop, beside which barley, oats, buckwheat, hemp, flax, tobacco, and the vine are raised to some extent. The horses are generally of superior breed, and many of them are trained for hunting. The rearing of bees is extensively practised, and honey is an important article of export. Some coarse cloths, iron ware, soap, tallow, and beet sugar are manufactured. The exports are wheat, cattle, hides, honey, wax, fruits, and hardware.—Voronej, the capital, is situated on the Voronej river, near its confluence with the Don, 130 m. E. from Koorsk; pop. in 1858, 40,439. It is built on a steep hill, and has a strong position. It consists of an upper and lower town with extensive suburbs. Some of the streets are narrow, dark, and gloomy, but the principal thoroughfare and several of the others of later date contain many imposing buildings. There are over 20 churches, several convents and hospitals, a military orphan asylum, and a gymnasium and other schools. The manufactures comprise soap, tallow, leather, and vitriol. The town has a large commerce by way of the Don. Peter the Great founded a palace here, and erected extensive dockyards and arsenals for the construction of a navy on the sea of Azof; but most of these establishments were subsequently removed to Tavrov, in the same government, and Rostov, and the palace has been destroyed by fire.

VORONTZOFF. See Woronzoff.

VÖRÖSMARTY, Mihály, a Hungarian poet, born in Nyék, in the county of Fejervár, in 1800, died in Pesth, Nov. 9, 1856. He studied law at Pesth, and in 1824 was admitted as an advocate, but afterward gave up practice in order to devote himself exclusively to literature. During his student years he wrote the drama of "King Solomon" (1821), founded on the history of King Solomon of Hungary, which was followed by "The Triumphs of Fidelity" (1822) and the drama of "King Sigismund" (1824). In 1824 also appeared his epic of *Zalán futása* ("The Flight of Zalan"), in 1825 the drama of *Kont*, in 1826 *Cserhalom*, and in 1827 *Tündervölgy* ("Fairy Valley"), the last two being esteemed the finest narrative poems in the Hungarian language. These, the subsequently published epic *Eger* ("Erlau"), and numerous fine ballads and lyrical poems, established his fame as the greatest master of Hungarian poetical diction. For some time he was editor of a Hungarian literary magazine entitled *Tudományos gyüjtemény* ("Repository of Science"), and was afterward one of the editors of the "Athenæum." In 1830 he became a member of the Hungarian academy founded that year at Pesth, and soon afterward its secretary. The patriotic song entitled *Szózat* ("The Appeal"), for which he received from the Hungarian academy a ducat a line, became the great national song of his people; and after the outbreak of the revolution of 1848 he was elected from the county of Bács to the national assembly. There his moderate views made him unpopular with the extreme men, and the fiery young poet Petöfi, formerly his warm admirer, wrote a poetical address to him renouncing his friendship. After the suppression of the rebellion, he was condemned by the Austrians, but was finally pardoned. The misfortunes of his country, however, had broken his spirit, and for several years he lived in retirement, entirely renouncing the pen. At last in 1854 his friends succeeded in inducing him to resume his literary labors, and he undertook a version of Shakespeare's plays, some of which he had already translated; but he did not live to complete the task. The principal edition of his collected works is that of Bajza and Toldy (10 vols., Pesth, 1845-'7).

VORSTIUS, Conrad, a German divine, born in Cologne, July 19, 1569, died in Tönningen, Holstein, Sept. 29, 1622. He was the son of a dyer who had secretly embraced the Protestant religion; and after receiving his early education in a village near Cologne, he studied at Düsseldorf from 1583 to 1586, and afterward at Cologne and Herborn. In 1593 he went to Heidelberg, where in the following year he was created a doctor of divinity; and in 1595 he journeyed to Switzerland, visiting the universities, taking part in theological discussions, and giving lectures on theology at Geneva, where he was offered the professorship of divinity. In 1596 he accepted a professorship at Steinfurt, where a divinity school had been founded by Count Arnold of Bentheim, at whose request he soon afterward went to Heidelberg to clear himself of a charge of Socinianism. Though acquitted, suspicion still clung to him. In 1610 he succeeded Arminius in the professorship of theology at Leyden. This appointment gave great alarm to the Calvinistic party of Holland, and Vorstius was very bitterly attacked, especially for his treatise *De Deo* (Steinfurt, 1610). James I. of England, on receiving the book, drew up a catalogue of heresies contained in it, and sent it to his minister at the Hague with a command to express to the states his detestation of these errors. He also had it burned publicly at Oxford, Cambridge, and London, and told the states that if they did not dismiss Vorstius from his professorship, none of his subjects should be allowed to go to Leyden. Subsequently he wrote a tract in which he declared that burning was altogether too mild a punishment for the unfortunate professor. As the controversy in Holland became very bitter, Vorstius was obliged to leave the country, and the synod of Dort in 1619 declared him unfit for his office, and ordered him to perpetual banishment. He lived two years in concealment, his life being several times in danger; but an asylum was offered by the duke of Holstein to him and the Arminians, and on a tract of land given them they built the town of Friedrichstadt. Vorstius wrote many works, chiefly controversial, and some few devotional, principally in Latin, but also in German and Dutch.

VOS, Martin de, a Dutch painter, born in Antwerp in 1531, died in 1603. He studied first under his father, who was a member of the academy at Antwerp, and afterward under Francis Floris and Tintoretto. He was made a member of the academy of Antwerp in 1559. There are upward of 600 prints after his designs. He distinguished himself both in historical and in portrait painting, and formed an excellent school, in which his nephew William de Vos is one of the most eminent.

VOSGES, a chain of mountains in the N. E. of France, forming a continuation of the Jura chain, between Lorraine and Alsace. They separate the Rhine from its W. affluent the Moselle, run N. along the borders of the departments of Haut-Rhin and Bas-Rhin on the E., and of Haute-Saône, Vosges, and Meurthe on the W., and extend into Belgium and into Rhenish Bavaria, where they terminate at the Donnersberg, on the left bank of the Rhine. The Faucilles, a spur of the chain, connect it with the Côte d'Or in the S. W., and with the Ardennes in the N. W. The rivers Saône, Aube, Marne, Meuse, and Moselle have their sources in these mountains. The average height is from 3,000 to 4,000 feet, and the rounded tops, covered with snow for several months in the year, are called by the French *ballons*. The highest summits are the Ballon de Grubwiller, 4,764 feet, the Ballon d'Alsace, 4,641 feet, and the Ballon de Servance, 4,550 feet. The mountains are well wooded and have mines of iron, copper, zinc, lead, and rock salt, and numerous mineral and thermal springs. Goitre and cretinism are prevalent.

VOSGES, a N. E. department of France, formed from the S. portion of the ancient province of Lorraine, bounded N. by the department of Meurthe, E. by Bas-Rhin and Haut-Rhin, S. by Haute-Saône, and W. by Haute-Marne; area, 2,271 sq. m.; pop. in 1862, 415,485. It has the Vosges mountains on the E. and the Faucilles on the S., and is drained by the Moselle, Meurthe, Meuse, and Saône. The climate is temperate in the lowlands and cold in the mountains. The soil is fertile in the valleys; grain is grown in small quantities, and some wine is made, but the principal crops are potatoes, hops, flax, clover and other grasses, and fruits. Many medicinal plants are cultivated. In the mountains are forests of oak, ash, &c. There are manufactures of iron and steel, cutlery, and paper. The exports are principally timber, pork, and cheese. Capital, Epinal.

VOSS, Johann Heinrich, a German scholar and miscellaneous author, born at Sommersdorf in Mecklenburg, Feb. 20, 1751, died in Heidelberg, March 26, 1826. Being unable from poverty to enter a university, he became in 1769 private tutor in a gentleman's family, and in 1772 accepted the invitation of Boje, the editor of the *Göttinger Musenalmanach*, for which he had written several poems, to come to Göttingen. He there became a prominent member of a society called the *Hainbund*, established for the cultivation of poetry and the improvement of the national taste. Originally designing to study theology, he gave it up for the study of philology, which he pursued at the university under Heyne. Voss often differed with his master, and as he refused to yield his opinion, an enmity sprang up between the two which lasted all their lives. After Boje's departure from Göttingen in 1774, Voss became editor of the *Musenalmanach;* but he left the university in 1775, went to Wandsbeck, where he lived on friendly terms with Claudius, in 1777 married the youngest sister of Boje, and in 1778 was made rector of the public school at Otterndorf in Hanover. Here he announced his intention of translating the Odyssey into German hexameter verse, and as preliminary thereto published some dissertations. On account of his manner of writing Greek names, he was attacked by Lichtenberg, a friend of Heyne, which widened the breach between Voss and the latter. The dispute between himself and Lichtenberg continued several years, and became so personal that Voss was obliged to publish a defence of his character in the *Deutsches Museum*. In 1781 his translation of the Odyssey appeared, and has ever since been the standard German version of that poem. In 1782 he became rector of the gymnasium of Eutin. Here, being in comparatively easy circumstances, he continued his labors, wrote many elegant original poems, and in 1789 published his edition of Virgil's Georgics with a German version, and a commentary, of which Niebuhr declared that it left nothing for future commentators to do. In 1793 he published his translation of the Iliad, followed by a revised edition of the Odyssey, which, though perhaps more correct than the previous version, was not so popular. He now devoted himself to the study of Grecian mythology, mostly in opposition to the views favored by Heyne; and his researches were embodied in his *Mythologische Briefe* (2 vols. 8vo., Königsberg, 1794). In 1797 he edited the Eclogues of Virgil, accompanied by a translation and a commentary. His original poems, which occupy a high position in German literature, and had appeared in various periodicals, were collected and published in 4 volumes in 1802. His health failing, he now resigned his office, received a pension of 600 thalers, lived for some years in retirement at Jena, and in 1803 published in the *Jenaer Allgemeine Literaturzeitung* the famous review of Heyne's edition of Homer, which created a great sensation among the scholars of Germany. In 1805, the elector (afterward grand duke) of Baden having invited him to Heidelberg with an offer of a pension of 1,000 florins, he removed thither, and, devoting himself again to literary studies, produced improved editions of his previous works, beside numerous new ones, among which were translations of Horace (1806 and 1821), Hesiod (1806), Theocritus, Bion, and Moschus (1808), Tibullus and Lygdamus (1810), Aristophanes (1821), and Aratus (1824). When 68 years old, he began, in conjunction with his sons Heinrich and Abraham, a translation of Shakespeare, which was not very successful, and was not completed at the time of his death. His early friend, Count Friedrich Stolberg, having been converted to the Roman Catholic religion in 1800, Voss in 1819 published an essay on the event entitled *Wie ward Fritz Stolberg ein Unfreier*, in which he attacked the Roman Catholics and the Protestant mystics of Germany. This led to a literary warfare, which divided all Germany into two parties. Voss's learning, especially in all departments of ancient literature, was of the fullest and most accurate character. As a philologist he ranks with Lessing and Wolf; as a translator his position in German literature is unsurpassed; and as a poet he holds a very high rank. The most famous of his poems is the *Luise*. He translated much from French and English. His shorter pieces were published in 1829 under the title of *Kritische Blätter, nebst geographischen Abhandlungen* (2 vols., Stuttgart). His life by Paulus was printed at Heidelberg in 1826, and another life by Schmid was prefixed to an edition of his poetical works (Leipsic, 1835).

VOSSIUS, Gerard Johannes, a Dutch author, born near Heidelberg in 1577, died in Amsterdam, March 17, 1649. He began his studies at Dort, in 1595 entered the university of Leyden, and upon the conclusion of his academical course devoted himself to the study of theology, ecclesiastical history, and the Hebrew language. At the age of 22 he was appointed master of the public school of Dort, in 1614 director of the theological college at Leyden, and in 1618 professor of eloquence and chronology in the latter institution. In 1620 the synod of Tergou deprived him of his professorship on the charge of Arminianism, founded upon his *Historia de Controversiis, quas Pelagius ejusque Reliquiæ moverunt*; but the next year the synod of Rotterdam restored him upon the condition that he should neither speak nor write against the synod of Dort. For some years he refused to comply with the condition, and in the mean time was prohibited from teaching in public or private. Archbishop Laud procured him a prebend in the cathedral of Canterbury, which he was permitted to hold as a sinecure until 1629, when he visited England and was installed. He returned to Holland soon after, and in 1633 was appointed professor of history in a college then newly founded at Amsterdam. He wrote a treatise *De Idololatria; Aristarchus, sive de Arte Grammatica; De Historicis Graecis; De Historicis Latinis;* and various other treatises on history, poetry, rhetoric, logic, and the mathematical sciences. His collected works are in 6 vols. fol. (Amsterdam, 1695–1701).—Isaac, a Dutch author, son of the preceding, born in Leyden in 1618, died at Windsor castle, England, Feb. 10, 1688. His education was conducted exclusively by his father. After his studies were completed he travelled for three years in Italy, France, and England, and in 1648 was invited to Sweden by Queen Christina. A misunderstanding with Salmasius exposed him to the queen's displeasure, and he returned to Holland in 1658. He was requested by the states of Holland to write a history of the war between England and Holland, and refused; upon which he was deprived of a pension he had hitherto enjoyed, and in 1670 went to England. At Oxford he was made a doctor of laws, and Charles II. made him a canon of Windsor in 1673, and assigned him apartments in the castle. Among his best known works are his *Variarum Observationum Liber; De Sibyllinis aliisque quæ Christi Natalem præcessere Oraculis; De Poematum Cantu et Viribus Rythmi;* and editions of Catullus and Pomponius Mela.

VOUET, Simon, a French painter, born in Paris in 1582, died there in 1641. In 1611 he visited Constantinople, where he painted from memory a portrait of the sultan Achmet I. He shortly afterward went to Rome, and while there his reputation gained him the patronage of Louis XIII., who gave him the appointment of king's painter. On his return to Paris his commissions were so numerous, that he employed a large number of assistants, some of whom became in after years more celebrated than Vouet himself. It is asserted that he was the founder of the French school of painting.

VOWEL. See Language, vol. x. p. 297.

VRIES, Hans Fredeman de, a Dutch painter, born in Leeuwarden, Friesland, in 1527. He studied for 5 years under an Amsterdam painter named Gerritsz. When Charles V. and his son Philip made their triumphal entry into Antwerp in 1549, De Vries was engaged in painting the arches. He published a treatise on perspective, of which he was a complete master; and 26 books of prints of his architectural and other designs have been published.

VRIES, Martin Gerritzoon, a Dutch navigator, who was intrusted by Van Diemen, the governor-general of the Dutch possessions in India, with the command of an expedition to explore the countries north of Japan. He sailed from Batavia in 1643 with two vessels, and examined the islands in the vicinity of Pérouse's strait. Schaep, his second in command, and some of the crew of Schaep's vessel, were seized by the Japanese on suspicion of introducing Portuguese priests into the empire, and kept in prison about a year. A narrative of the voyage appeared at Amsterdam in 1646, and an abstract of it is given by Thévenot.

VULCAN, the Latin name of the Greek Hephæstus, the god of fire. According to the Hesiodic theogony, he was one of the 12 great gods of Olympus; but one account made him the son of Jupiter and Juno, the other of Juno alone, who bore him by her own unaided generative power. In Homer he is represented as deformed from his birth, and his appearance so disgusted his mother that she dropped him from Olympus into the sea, where he was received and kindly treated by the marine deities Thetis and Eurynome, with whom he remained nine years. Later writers relate that he was brought up in heaven with the other gods, and that once interfering in behalf of his mother, who had been fastened by Jupiter with a golden chain, he was kicked by the latter out of Olympus. Nine days he spent in passing to the earth, and at length fell in the island of Lemnos. His leg was broken by the fall, and in this way he was rendered lame. There he built himself a palace, and constructed workshops and forges. Afterward he returned to Olympus and acted as mediator between Jupiter and Juno. The works attributed to him were very celebrated in Grecian story.

VULGATE. See BIBLE, vol. iii. p. 232.

VULPIUS, CHRISTIAN AUGUST, a German author, born in Weimar, Jan. 23, 1762, died there, June 26, 1827. He was educated at Jena and Erlangen, and having been led by translations of French and Italian books of chivalry to the study of German romance, he published *Romantische Geschichten der Vorzeit* (12 vols., Leipsic, 1791–'8), and *Anekdoten aus der Vorzeit* (2 vols., Leipsic, 1797). From 1788 to 1797 he lived in Franconia, and subsequently, after having resided in various cities, returned to Weimar, where he received the position of secretary of the court theatre, then under the direction of Goethe. He now wrote *Rinaldo Rinaldini* (3 vols., Leipsic, 1799), which was received with universal applause, was translated into almost all the modern languages, and has formed the model of a countless number of robber romances. He also composed numerous comic stories and stories of the middle ages, dramas, and operas, and contributed to various periodicals. At a later period he was made secretary of the library, and devoting himself still more to the study of history, numismatics, heraldry, and genealogy, published *Curiositäten der physiologisch-literarisch-artistisch-historischen Vor- und Mitwelt* (10 vols., Weimar, 1811–'26). At the time of his death he was overseer of the cabinet of coins, first librarian, and a member of the ducal council.—His sister, CHRISTINE, was originally the mistress, and afterward the wife of Goethe.

VULTURE, the common name of the carrion-eating, diurnal birds of prey, of the family *vulturidæ*. The bill is elongated, sometimes slender, never so strong as in the eagles, straight in the basal portion, and suddenly hooked but not toothed at the tip; eyes on the level of the head, or without the prominent superior bony ridge seen in the *falconidæ;* wings long and pointed; tarsi short, stout, bare of feathers, and covered with scales; toes moderate, the hind one short and rather elevated, and all with strong, blunt claws; in the typical forms the head and neck are bare, or clothed only with a woolly down. They are cowardly, filthy birds, feeding on carrion, gorging themselves to a stupid inactivity, and emitting a disgusting odor and a fetid secretion from the nostrils. As soon as an animal is dead, and sometimes before death, the carcass, in warm climates, is surrounded by these birds, which suddenly appear, coming from all quarters, where one was not visible before. Disgusting as are their habits, they are invaluable in tropical regions in devouring animal substances, whose speedy decomposition would otherwise engender pestilential diseases. They make use of the beak rather than the claws in tearing and seizing their food; their gait is awkward, and the wings so long that they hold them half extended when walking; their voracity is extreme, and their crop very prominent after feeding; their very attitude, half inclined, as contrasted with the erect position of the eagles, shows their cowardly and ignoble disposition; they are the only gregarious birds of prey, and, if the eagle be compared to the lion, the vulture may be likened to the jackal or the hyæna.—The group of bearded vultures (*gypaëtinæ*), coming nearest the eagles in appearance and habits, has been sufficiently noticed under LAMMERGEYER, the largest of European birds. The *vulturinæ* or true vultures occur in both hemispheres, though they are principally confined to the warm regions; a few prey upon small living animals, but most feed upon carrion, which they detect by the sense of sight at great distances; they are good fliers, soaring to a great elevation and sailing in large circles; the nest is made on the ground, amid inaccessible rocks, and sometimes in trees; the eggs are 2 to 4. In the genus *vultur* (Linn.) the bill is large, elevated, and arched; 3d and 4th quills longest; shafts of tail feathers strong and projecting beyond webs; claws slightly curved and sharp, and with the bill more like those of the ordinary birds of prey; head with scattered down, and hind head generally with a transverse crest of thicker down, and ruff of neck advancing toward it. The flight is slow but elevated; the nest is very slightly made, and the young are fed with the regurgitated food of the parents. The Arabian or cinereous vulture (*V. monachus*, Linn.) is about 3½ feet long, dark brown, with a fawn-colored collar rising obliquely toward the occiput; it inhabits the mountains of S. Europe, Arabia, and Africa.—The griffon or tawny vulture (*gyps fulvus*, Sav.) is 3½ feet long and 8½ in alar extent, of a brownish gray color, approaching fawn, the down of the head and neck cinereous white, and the collar mixed white and brown; quills and tail brown; the bill is large and swollen at the sides. It is widely extended among the mountains of the old world, frequenting in flocks the Alps, Pyrénées, and Caucasus in summer, going south in winter; the nest is sometimes made in lofty trees.—The sociable vulture (*otogyps auricularis*, Gray) measures 10 feet in alar extent; the prevailing color is blackish brown above, lighter below, with head and most of neck naked and red, the sides of the latter with lengthened wattles from below each ear. It is a mountain species, inhabiting Africa, a grand and powerful flier, rising so as to be lost to sight.—The Egyptian vulture, sometimes called Pharaoh's chicken (*neophron percnopterus*, Sav.), is about 2½ feet long, with a very long and slender bill, the 3d quill the longest, tail moderate and wedge-shaped, and tarsi plumed below the knees; the adult male is white with black quills, the female and young brown. It is a carrion feeder, and held in high esteem by the ancient and modern Egyptians for its services in devouring the filth of their cities and the decaying matters brought down by the Nile; it is often represented on their monuments. It sometimes devours small living animals. It follows caravans, consuming every thing that dies; devout Mussulmans have occasionally bequeathed property for the support of a certain number of these useful birds. From Africa they come to the Pyrénées and Alps.—Among the American species, the condor and the turkey buzzard have been described under those titles; the king vulture has been noticed under the former. The California vulture (*cathartes Californianus*, Shaw) is the largest rapacious bird of North America, being over 4 feet long and about 10 in extent of wings; it is shining black above, duller below, with secondaries grayish, white band on wings, bill yellowish white, and head and bare neck orange yellow and red; it is found west of the Rocky mountains, especially in the vicinity of rivers, and is inferior in size only to the condor, which it resembles in habits. The black vulture or carrion crow (*C. atratus*, Bartr.) is 23 inches long and 4½ feet in alar extent; the color is deep black, with a bluish gloss on the back and wings; shafts of quills white; head and naked part of neck with warts and a few hair-like feathers, and bluish black; bill dark, yellowish at the end. It is found in the southern states and Central and South America, gregarious, associating with the turkey buzzards, and with them performing the very useful office of scavengers, even in the streets of populous cities. It is common in Chili and Peru, and in the latter Tschudi speaks of it as sitting in incredible numbers on the walls of the streets and on the roofs of houses, in the midday heat, asleep with the head under the wings.

VYASA, or VEDAVYASA ("compiler of Vedas"), the name given to the supposed author or compiler of the four Sanscrit Vedas, and of the *Mahabharata*, a poem in 18 cantos or *pawas* on the wars between the progeny of the sun and of the moon. (See BHAGAVAT GITA, BRAHMA, SANSCRIT, and VEDAS.) Nothing is known of his history, nor is it certain indeed that any such person ever existed.

W

W, the 23d letter of the English alphabet, is peculiar to some of the Teutonic and Celtic languages, being foreign to the Romanic, and in sound, though not in form, also to the Slavic branches of the Indo-European family, while retained by its Asiatic branches. Its earliest historical appearance is in a diploma of Clovis III. at the end of the 7th century. It first came to be used in England about the time of the conquest, when it was used indifferently in writing instead of the Anglo-Saxon þ. It is formed, as its name in English shows, by the doubling of the letter *u* or *v*. In English, as in Dutch and Flemish, and in some German dialects after *sch* and *z*, it is so pronounced that while most writers describe it as a semi-vowel, others, including Noah Webster, have classed it as a pure vowel, equivalent in fact to the English *oo*; but Leon Vaïsse contends that in these cases it is a perfect consonant of the labial class, being produced by a movement of the larynx, while the vowels are sounded by a steady tension of the walls of the pharynx. Jacob Grimm also classes it as a labial aspirate. Its sound is commenced by the expulsion of the breath through the puckered lips, and completed by the sudden withdrawal of the lower lip. In German, except in the cases above mentioned, and in Swedish, in which for a long period it has been comparatively disused, it has the value of our *v*, as it has in the vulgar English of London; and Grimm recommends that it be dropped from the German altogether as needless, the sound which it properly represents, that of the English W, being, as he says, unknown to the language. In Danish and Icelandic it is used only in writing foreign words. In Welsh, *w* represents only the English *oo*, as *fŵl*, fool. In English, at the end of words, it is either silent, as in *low*, *row*; or it modifies the preceding vowel, as in *new*, *paw*, *how*.—Originally, there is no doubt that W was a guttural, and it is so classified by Kraitsir (see LANGUAGE, vol. x. p. 298); while the close relationship with the gutturals which belongs to its character as an aspirated letter is generally recognized. In French writing of the 11th–14th centuries it was used indifferently instead of *g*, the word *guide*, for instance, being then often written *wide;* while on the other hand the French word *guerre*, war, is but the German word *Wehr*. *Guillaume*, William, *Galles*, Wales, *Gauthier*, Walter, are well known instances of this early French mode of writing the Teutonic W. Collateral instances in English are our words *ward*, *guard*, *warranty*, *guaranty*. The original gutturality of W is also shown by comparing numerous English words with their Teutonic originals, as *awe*, Goth. *agjan; bow*, Ger. *Bogen; own*, Anglo-Sax. *ogen; maw*, Anglo-Sax. *maga; marrow*, Anglo-Sax. *mearh*, &c. Mr. Marsh ("Lectures on the English Language") cites Richard Mulcaster and Alexander Gil to prove that W was anciently articulated in *wrath*, *wrong*, *write*, *wrench*, *wretch*, though its precise force cannot now be ascertained. In many English words beginning with *wh*, the *w* is of modern introduction; thus, *whole*, Sax. *hal*, was written without a *w* until the latter part of the 16th century.

WAAGEN, Gustav Friedrich, a German author and art critic, born in Hamburg, Feb. 11, 1794. After serving as a volunteer in the great popular uprising in Germany in 1813–'14, he continued his art studies at Breslau, Dresden, and Heidelberg, and about 1820 established himself in Munich, where in the same year he published his first work, a pamphlet on the Egyptian mummies in the royal collection of Munich, followed in 1822 by a monograph on Hubert and Jan van Eyck. In 1823 he was appointed director of the royal gallery of paintings in Berlin, and in 1832 of the portrait gallery of the new museum in that city, in which capacity he was one of the first to attempt the arrangement of pictures in chronological order. In 1844 he delivered a course of instruction at the university of Berlin on the history of art. In 1837 appeared his elaborate work entitled *Kunstwerke und Künstler in England und Frankreich* (4 vols., Berlin), of which the portion relating to England was translated in the succeeding year. Upon the basis of this latter work he produced in 1854 his "Treasures of Art in Great Britain" (3 vols. 8vo.), to which was added in 1858 a supplementary volume entitled "Additional Art Treasures in Great Britain, being an Account of Forty Galleries visited in 1854 and 1856, and now for the first time described." His remaining works comprise the "Works of Art and Artists of Germany" (2 vols., Leipsic, 1843–'5); essays on the "Life and Genius of Rubens" and on "Andrea Mantegna and Luca Signorelli," and a variety of miscellaneous essays.

WABASH, a river of Indiana and Illinois, which has its source in Mercer co., Ohio, near the W. border of the state. Its course is first N. W. to Huntington, Ind., thence W. by S. to Logansport, and thence S. W. to Covington, where it turns almost directly S.; a little below Terre Haute it assumes a S. S. W. direction, and forms the boundary between Indiana and Illinois to the point where it enters the Ohio, 140 m. above the mouth of that river, in lat 37° 50′ N., long. 88° W. Its whole length is estimated at 550 m., for more than 300 m. of which it is navigable by steamboats at high water. It is the largest affluent of the Ohio from the N., and the principal river intersecting the state of Indiana. Its chief tributaries are the Tippecanoe, Big Vermilion, and Embarras rivers on the right bank, and the Salamonie, Raccoon creek, and White river on the left. The last named is navigable in time of high water for 200 m. The Wabash and Erie canal follows the course of the Wabash river for 180 m. from Huntington to Terre Haute.

WABASH. I. A N. E. co. of Ind., drained by the Wabash, Salamonie, and Eel rivers; area, 420 sq. m.; pop. in 1860, 17,547. It has a diversified surface, partly covered with fine forests, and the soil is highly fertile. The productions in 1850 were 434,962 bushels of Indian corn, 117,803 of wheat, 28,047 of oats, 30,727 of potatoes, 170,102 lbs. of butter, 79,868 of maple sugar, 17,137 of wool, and 4,107 tons of hay. There were 10 grist mills, 17 saw mills, 8 tanneries, 11 churches, 2 newspaper offices, and 1,366 pupils attending public schools. The county is intersected by the Wabash and Erie canal, and the Toledo, Wabash, and St. Louis railroad. Capital, Wabash. II. A S. E. co. of Ill., bordering on Ind., bounded S. E. by the Wabash river, and drained by Bonpas creek and other streams; area, 110 sq. m.; pop. in 1860, 7,312. The surface is generally level and diversified with prairie and forest, and the soil is fertile. The productions in 1850 were 320,000 bushels of Indian corn, 12,438 of wheat, 44,895 of oats, 10,230 lbs. of wool, and 2,222 tons of hay. There were 6 grist mills, 4 saw mills, 1 tannery, 1 newspaper office, 11 churches, and 750 pupils attending public schools. Capital, Mt. Carmel.

WABASHAW, a S. E. co. of Minnesota, bounded E. by the Mississippi river, which separates it from Wisconsin, and intersected by the Embarras, Miniska, and Waxi Oju rivers; area, about 700 sq. m.; pop. in 1860, 7,228. The surface is undulating, with some prairie, and the soil fertile. Lake Pepin lies on the E. border. Capital, Wabashaw.

WABONSE, a N. E. co. of Kansas, bounded N. by the Wabonse river, and drained by its affluents and other small tributaries of the Kansas river; area, about 750 sq. m.; pop. in 1860, 1,964. The surface is undulating and the soil productive. Capital, Wabonse.

WACE, Master Robert, an Anglo-Norman poet, born in Jersey about 1112, died probably in England about 1184. His name is variously written, and appears to be an abbreviation or corruption of Eustace. He passed the greater portion of his life in Caen, where the kings of England then usually held their court when in Normandy, and in 1161 was made a canon of the cathedral church in Bayeux. He is supposed also to have been a favorite chaplain of Henry II. His authentic works comprise *Le* *roman de Rou* (*Rollo*) *et des ducs de Normandie*, a poem written about 1171, partly in Alexandrine and partly in octosyllabic verse, and remarkable as a monument of the language and as a picturesque record of memorable events, including the battle of Hastings and the Norman conquest of England; *Le Brut d'Angleterre* (1155), a paraphrastic version of Geoffrey of Monmouth's "British History;" *Le chronique ascendante des ducs de Normandie;* and some shorter poems of less importance. Several poems of doubtful authenticity have also been attributed to him. A critical edition of the *Roman de Rou*, with notes by F. Pluquet, was published in Rouen in 1827 (2 vols. 8vo.).

WACHLER, Johann Friedrich Ludwig, a German literary historian, born in Gotha, April 15, 1767, died in Breslau, April 4, 1838. He studied in his native city, and subsequently at the universities of Jena and Göttingen; was successively professor of theology, history, and philosophy, and again of history, in Rinteln, Marburg, and Breslau; and eventually was appointed chief librarian of the university in the last named city. His works are numerous, and distinguished by erudition, as well as elegance of style. The principal are: *Geschichte der Literatur*, &c. (3 vols., 1793); *Geschichte der historischen Forschung und Kunst* (2 vols., 1812-'20); *Lehrbuch der Geschichte* (1817); and *Vorlesungen über die Geschichte der deutschen Nationalliteratur* (2 vols., 1818).

WACHSMUTH, Ernst Wilhelm Gottlieb, a German historian, born in Hildesheim, Dec. 28, 1784. He studied theology at the university of Halle, where he received the instruction of F. A. Wolf, Schleiermacher, and Niemeyer, but subsequently devoted himself to languages, literature, and history. He lectured on the Italian language and history at the university of Halle, and was afterward professor of history at the universities of Kiel and Leipsic. His principal works are: *Hellenische Alterthumskunde* (2d ed., 4 vols., Halle, 1843-'6); *Europäische Sittengeschichte* (5 vols., Leipsic, 1831-'9); *Geschichte des Zeitalters der Revolution* (4 vols., Leipsic, 1846-'8); *Allgemeine Culturgeschichte* (3 vols., Leipsic, 1850-'52); and *Geschichte der politischen Parteiungen* (4 vols., Brunswick, 1853-'6).

WÄCHTER, Karl Georg von, a German publicist, born in Marbach-on-the-Neckar, Dec. 24, 1797. He was educated at the universities of Tübingen and Heidelberg, at the former of which he was in 1820 appointed assistant professor of law. In 1822 he became titular professor, in 1825 rector of the university, and in 1836 professor of law and chancellor, having during the previous 3 years occupied the chair of law at Leipsic. As chancellor he held also the position of member of the parliament of Würtemberg, and from 1839 to 1851 presided over the chamber of deputies. In the latter year he resigned his chancellorship, and was appointed president of the supreme court of appeal of the 4 free cities; but at the end of a few months he exchanged this office for that of professor of civil law at the university of Leipsic and counsellor of the court of Saxony. His works evince a profound knowledge of German law and its sources.

WACKERNAGEL, Karl Heinrich Wilhelm, a German author, born in Berlin, April 23, 1806. At the university of Berlin he studied the early literature of Germany under Lachmann, and in 1833 he was appointed professor of the German language and literature at Basel, where he has since resided. He has been a prolific writer on subjects connected with literature, æsthetics, ethics, the fine arts, law, and theology, and has a considerable reputation as a poet.

WADAY, a kingdom of central Africa, lying S. of the great desert and W. of Darfoor. The natives generally call it Dar-Saleyh, and in Darfoor, Kordofan, and Bornoo it is called Borgoo. Very little is known of it with any certainty. Its surface is generally level, though there are many isolated mountains. It has altogether an inclination from E. to W., from the foot of a mountain range named Jebel Marra to Lake Kuku. In the northern provinces of the country there are large desert tracts, with small water courses interspersed at intervals. The southern portion of the country is better watered and more fertile. The kingdom comprises in all about 26 tribes of negroes and Arabs, and is governed by a sultan who resides at Abeshr, and under whom there are 4 provincial governors. The largest town is Kodogus, containing about 600 houses. Although Waday is mainly a pastoral country, immensely rich in horses and flocks of every kind, it has a considerable commerce, which is subject to a large tax. The principal articles of trade are salt, copper, fine cloths, harnesses, coats of mail, beads, calico, paper, needles, ivory (taken in exchange from neighboring countries for export), and tobacco. It appears that all the large bargains are made in cattle, and the smaller in strips of cotton cloth. There are few manufactures, and these are of the rudest kind. The army consists of 7,000 cavalry, of whom 1,000 are mail-clad. The country has long been racked with civil wars, and of late few of the sultans have died a natural death. The religion is a mixture of Mohammedanism and paganism, but Dr. Barth found among the negro tribes a translation of the Lord's prayer.—It is asserted that the foundation of what is now the kingdom of Waday was laid by Abd-el-Kerim as long ago as 1020. He established his seat at Madaba, a mountainous district near the town of Wara, the meaning of the latter name being literally "the town encircled by hills." The kingdom, according to the accepted accounts, has thus existed for more than 800 years, with a regular succession of sovereigns.

WADDEL, James, D.D., an American clergyman, born in Newry, Ireland, in July, 1739, died in Louisa co., Va., Sept. 17, 1805. His parents emigrated to Pennsylvania during his infancy. He was educated at the classical school of the Rev. Dr. Finley at Nottingham, Md., in which at an early age he became an assistant, and subsequently he taught at Pequea, Lancaster co., Penn. He began the study of medicine, but having been induced by the Rev. Samuel Davies to enter the ministry, he studied theology, and was licensed as a probationer at Tinkling Spring, Va., by the presbytery of Hanover, in 1761. In 1762 he accepted a call from the churches of Lancaster and Northumberland, but resigned his charge in 1776 and removed to the valley of the Shenandoah. In 1785 he removed to a large estate purchased by him in Louisa co., which he called Hopewell, and preached in various churches in that region during the remaining 20 years of his life. Shortly after his last removal he became blind. His reputation as a pulpit orator has become wide-spread through the well known description of his preaching given by William Wirt, early in the present century, in the "British Spy." Mr. Wirt heard him after he had become blind and paralytic, but says that he exceeded all that he had been able to conceive of the sublimity of Massillon or the force of Bourdaloue. Dr. Waddel was the father-in-law of the Rev. Archibald Alexander, D.D. At his death he ordered all his manuscripts to be destroyed.

WADDING, Luke, a Roman Catholic scholar and author, born in Waterford, Ireland, Oct. 16, 1588, died in Rome, Nov. 18, 1657. When 15 years old he was sent abroad to finish his theological education, studied for 6 months at the Jesuit seminary of Lisbon, and, having joined the order of the Franciscans in 1605, completed his education in their convents of Liria, Coimbra, and Lisbon. After taking orders he went to Salamanca, and was made lecturer on divinity in that university; and in 1618, when Anthony à Trejo, bishop of Carthagena, was sent to Rome as legate to settle the controversy in regard to the immaculate conception of the Virgin Mary, Wadding accompanied him as chaplain to the embassy. On this subject he wrote several pamphlets, and after the return of the bishop of Carthagena the whole of the business of the embassy was nominally intrusted to the duke of Albuquerque, but really performed by Wadding. He wrote its history in a folio volume entitled *Legatio Philippi III. et IV., Hispaniæ Regum, ad Sanctissimos DD. Paulum V. et Gregorium XV. et Urbanum VIII., pro definienda Controversia Conceptionis B. Mariæ Virginis.* The remainder of Wadding's life was spent at Rome, where from 1630 to 1634 he held the office of procurator of the Franciscans, and from 1645 to 1648 was the vice-commissary of his order. He founded in 1625 the college of St. Isidore, for the education of Irish students who belonged to the Franciscan order, aided several other theological students, and was one of the councillors appointed in the case of Jansenius, whose doctrines he favored, but he retracted his opinion as soon as they were condemned by the papal bull. His most important work is his history of the order of the Franciscans, entitled *Annales Minorum* (8 vols. fol., Lyons and Rome, 1647-'54). He also edited a collection of the writings of Duns Scotus (12 vols. fol., Lyons, 1639), and wrote a bibliographical history of the Franciscans.

WADE, Benjamin Franklin, an American statesman, born in Springfield, Mass., Oct. 27, 1800. His father, a soldier of the revolution, was poor, and his early education was obtained in the common schools. After he arrived at manhood he usually spent his summers in labor as a farmer or lumberman, and his winters in school-keeping. He was for some months employed with spade and wheelbarrow in the digging of the Erie canal. In 1826 he began to study law in Ohio with Elisha Whittlesey, and in 1828 was admitted to the bar in Ashtabula co., where he has ever since resided. In 1835 he was elected prosecuting attorney of that county, and in 1837 he was returned to the senate of Ohio, to which body he was twice reëlected. In 1847 he was chosen by the legislature president judge of the third judicial district of the state; and in 1851, while holding court at Akron, he was elected a member of the U. S. senate, to which body he was again returned in 1857. In the senate Mr. Wade has been prominent, first as a leader of the anti-slavery whigs and then of the republicans. He has been a steady and consistent opponent of all measures which he conceived to be intended for the benefit of slavery. In 1852 he voted, with only five other senators, to repeal the fugitive slave law; he also spoke and voted against Mr. Douglas's bill to abrogate the Missouri compromise; against the Lecompton constitution for Kansas in 1858; against Mr. Slidell's bill appropriating $30,000,000 for the acquisition of Cuba; and against all the schemes of compromise between North and South propounded after Mr. Lincoln's election in 1860. The homestead bill, making a free grant of 160 acres of public land to every actual settler, he advocated for years, and it was in his charge when it was finally passed by the senate in 1862. The agricultural college bill, and the Pacific railroad bill, he has always supported, as he has every measure for the protection of American industry. On every occasion he has opposed the increase of the standing army, and has favored the discontinuance of West Point military academy on the ground that it is essentially aristocratic, anomalous, and impolitic. From the outbreak of the civil war in 1861 Mr. Wade has labored incessantly for a more vigorous treatment of the war and a more rigorous dealing with the enemies of the government. On the opening of the 37th congress he became chairman of the joint committee on the conduct of the war appointed by the two houses, and also took an active part in urging the enactment of a law to confiscate all the property of leading rebels and emancipate their slaves. He spoke and voted for the bill making treasury notes a legal tender, and for the bills abolishing slavery and the so called black laws in the District of Columbia. As chairman of the territorial committee, he reported a bill in 1862 abolishing slavery in all the territories of the government, and prohibiting it in any that may hereafter be acquired. We should add that he has also constantly insisted on the utmost economy in the public expenditures, and on holding officials to a stringent accountability.

WADSWORTH, James, an American philanthropist, born in Durham, Conn., April 20, 1768, died in Geneseo, N. Y., June 7, 1844. He was graduated at Yale college in 1788, and in 1790 removed with his brother to the Genesee river, purchasing a large tract of land in what is now the town of Geneseo, and also acting as agent for the estate of another person. In time he became one of the richest land proprietors in New York. He interested himself warmly in the cause of education, printing and circulating publications on the subject at his own expense, employing persons to lecture on it, and offering premiums to the towns which should first establish school libraries. As early as 1811 he proposed the establishment of normal schools, and continued to urge it until the state normal school was founded. He procured the enactment of the school library law in 1838, founded a library and institution for scientific lectures at Geneseo and endowed it with $10,000, and in his sales of land always stipulated that a tract of 125 acres in each township should be granted free for a church, and another of the same size for a school. His donations to the cause of education exceeded $90,000.

WAFER (Dutch, *wafel*), a thin and generally circular cake of some farinaceous material made for a variety of purposes. The principal kinds of wafers are: 1, the wafer of unleavened bread used in the administration of the eucharist by the Roman Catholic and most of the oriental churches, as also by a portion of the Lutherans of Europe (see Lord's Supper); 2, a thin round cake, often formed into a roll, sold by pastry cooks; this seems to have been the earliest use of the name in England, and the persons selling them were formerly called "waferers;" and 3, the thin disks used for sealing letters and fastening together pieces of paper. The Genoese appear to have been the first who made wafers for the last named purpose, and caused them to receive the impression of a seal when attached to legal documents. According to Beckmann, red wafers thus impressed were used as far back as the year 1624; but he adds that during the whole of the 17th century they were never used in the chancery of Brandenburg, and but seldom by private persons. In the duchy of Weimar an order of the year 1716, forbidding their use in law matters, was annulled in 1742. At present, in most of the United States and in many other countries, they are employed not only to attach seals of other materials to legal documents, but themselves serve as seals, either plain or receiving an impression like sealing wax. (See Seal.)—Common wafers are made from fine wheat flour formed into a thin paste with cold water, to which coloring matter and sometimes a little white of egg or isinglass are added; and this paste is then baked between plates of iron hinged together, like those used for making waffles, which have been previously warmed and greased to prevent adhesion. After remaining a few moments over the fire, the baked paste is taken out in a sheet, and dried in the air, when it becomes firm and brittle. Several sheets are piled upon each other and cut with hollow punches to the required size. Transparent wafers are prepared by dissolving fine glue or isinglass in such a quantity of water that the solution will solidify on cooling; coloring matter, and in some cases even perfumes, are added to the hot liquid, which is then poured upon a plate of glass previously heated by steam, smeared with a little oil, butter, or sometimes ox gall, to prevent adhesion, and surrounded by a ledge of the same height as the required thickness of the wafers. A second plate of glass is then placed upon it, which expels the excess of liquid, and forms the upper surface; the whole is allowed to cool, when the transparent sheet is easily removed, and is cut into wafers with punches. Medallion wafers, in which a design in relief is shown on a darker ground, as in a cameo, and which were in fashion some years ago, were prepared by moistening a plate of metal, on which the design had been engraved in intaglio, with a solution of gum mixed with some opaque color, which was then carefully removed from the smooth uncut part of the surface, and a colored solution of glue or isinglass was poured on the plate. In drying, the glue and gum contracted and were thus easily separated from the mould, and the wafers were then punched out as usual.—The colors employed for wafers are: for red, vermilion, carmine, a decoction of Brazil wood brightened with alum, and for cheap wafers red lead; for yellow, saffron, turmeric, or a decoction of weld, fustic, or Persian berries; for blue, an alcoholic solution of sulphate of indigo partially neutralized with potash or chalk; for black, a mixture of sulphate of iron (green vitriol) and gall nuts. The other colors are produced by mixtures of these. The opaque colors, such as vermilion, carmine, and red lead, can, of course, only be used for wafers of the ordinary kind. The ingredients used for coloring red wafers are generally of a poisonous character, and, the wafers being put in the mouth to wet them, injurious effects have attended their use; and in some instances where they are employed in large quantities, it has been found necessary to substitute white wafers for the colored.—A patent was taken out in 1850 by M. de Fontainemoreau for three methods of making wafers with a surface of metal foil. In the first, the foil was coated with the ordinary paste used for wafers, then placed in the wafer iron and baked as usual; a wafer with the lower surface adhesive and the upper of bright metal was thus obtained. In the second, the foil was pasted to paper, the lower surface of which was then gummed. In the third, the foil was placed on gummed paper, the lower side of which was coated with a resinous cement; these wafers require to be heated instead of being moistened. Wafers made of colored, gilt, or silvered paper, gummed on the lower surface, and generally embossed, are also frequently used.

WAGER, in law, a contract by which two parties agree that a certain thing shall be done by one for the benefit of the other, on the happening or not happening of a contingent event. Wagers were certainly valid contracts at common law; but from early ages many exceptions were made. They were void if immoral, or opposed to public policy, or indecent, or tending to restrain or prevent marriage. In the United States, the objection has been extended to any wager about the age, height, weight, wealth, situation, or circumstances of any person, of any age or either sex. So, too, all wagers are void, and perhaps punishable, if such as to interfere with the free and honest exercise of the elective franchise. By the statute 8 and 9 Victoria, ch. 100, sec. 18, all wagers are null and void; and the tendency both of legislation and adjudication in the United States is in the same direction. Thus, in New York, it has been held, in the construction of a statute against wagers, that if a stakeholder pays the stake to a winner by the direction of the loser, the latter may nevertheless have his action for it against the stakeholder. This is not generally law, but in many of the states either party would be permitted to reclaim his share of the stake from the stakeholder before the event is determined, and in some after it is determined if the stake be not yet paid over. In others it seems to be still law, that if the wager be not illegal by force of one of the exceptions above mentioned, the stakeholder is bound to pay it over to the winner on the happening of the event. It may be doubted now, however, whether an action by a winner of a mere wager or bet against a loser would be sustained in any court. But it cannot be said that the law of wagers is uniform in the United States, or that it is free from uncertainty on many points.

WAGER OF BATTLE. See Appeal.

WAGER OF LAW. See Criminal Law, vol. vi. p. 70.

WAGNER, Moritz, a German traveller, born in Baireuth in 1813. He was educated for commercial life, and entered a mercantile house at Marseilles. A visit to Algiers resulted in his abandoning trade to devote himself to travelling. He first spent some time in Paris to study the natural sciences, and then in 1836 went to Algeria, where he remained two years, visiting every part of the colony, and published his observations in his *Reisen in der Regentschaft Algier* (Leipsic, 1841). In 1843 he went to the Caucasus and Armenia, where he remained three years, the fruits of which are contained in *Der Kaukasus und das Land der Kosacken* (Leipsic, 1848), and *Reise nach Kolchis und den deutschen Colonien jenseit des Kaukasus* (Leipsic, 1850). After spending some time in Italy, he made a new journey to the East, and published *Reise nach Persien und dem Lande der Kurden* (Leipsic, 1852–'3). In 1852 he visited the United States and Central America in company with Dr. Karl Scherzer, and jointly with him published *Reisen in Nordamerika* (Leipsic, 1854) and *Die Republik Costa-Rica* (1856).

WAGNER, Richard, a German composer, born in Leipsic, May 22, 1813. He received but little scholastic education, and from a very early period was suffered to pursue such studies as first attracted him. For a while he was devoted to poetry and the drama, and when 12 years old busied himself with writing plays. He also tried his hand at painting, and put himself for some time under the tuition of a master of this art. His thoughts were first fixed upon music by hearing Weber's *Der Freyschütz;* and when at the age of 15 he became acquainted with Beethoven's symphonies, he resolved to devote himself to music. The first of his compositions of which he speaks was a *comédie champêtre*, written under the inspiration of the "Pastoral Symphony." This was never performed, but in 1833 a symphony written by him was presented at a concert in Leipsic. In 1836 he was made director of music in the theatre at Magdeburg, and at once wrote for it an opera entitled "The Fairies," which however was not produced. In 1836 he brought out "The Novice of Palermo," of which the words and music were both his own, and which failed. He consequently resigned his place, and accepted the office of musical director at Königsberg, whence he soon after removed to Riga, where he held a similar position. Here he commenced a comic opera, on a subject taken from the Arabian Nights, but abandoned it before its completion. His aspirations then turned toward Paris, and in order to prepare himself for a favorable reception there, he wrote the beginning of a more elaborate opera than any he had previously composed, called "Rienzi." On arriving at the French capital he found that the want of means and influence interrupted all his plans. Maurice Schlesinger, a music publisher and journalist, befriended him, and gave him first employment, and afterward the opportunity of putting forward his claim to artistic recognition. He published a number of songs, but their eccentric forms prevented their success. Schlesinger also procured for Wagner a commission to write an overture for the *société des concerts*, upon which he prepared his "Faust," which was rehearsed once and then set aside, the society not hazarding the experiment of producing so eccentric a work. A lightly written opera, called *La défense de l'amour*, was also refused a hearing. These repeated failures brought no discouragement to

Wagner. He was resolved to write for the grand opera, however long he might have to wait. Meanwhile he consented to prepare vaudeville music for the minor theatres, until it was intimated that his compositions were altogether too fantastic for the purpose. He was then left with two operas on his hands, "Rienzi" and the *Vaisseau fantôme*, and not a sou in his pocket. In this dilemma he took to writing novels, in which field he reaped his first success. But literary triumphs were not what he sought for; so, selling the libretto of his *Vaisseau fantôme* to pay his way, he removed to Dresden, where "Rienzi" had been accepted at one of the principal theatres. On his route thither Wagner conceived the intention of writing an opera which should thoroughly embody his theories and convictions of the art—a step he had not ventured to take either in "Rienzi" or the *Vaisseau fantôme. Tannhäuser* was afterward the result of this conception. At Dresden "Rienzi" was received with favor, and the composer was rewarded by the office of chapelmaster to the king of Saxony. In 1843 the *Vaisseau fantôme* was brought out. It failed utterly, and, although soon after reproduced at Berlin, Cassel, and other musical capitals, never received a popular plaudit. "Rienzi" failed everywhere excepting in Dresden. Wagner persisted, however, in developing his theories in the composition of *Tannhäuser*, which was produced in 1845 at Dresden after unexampled care in its preparation; but it received only two representations. The composer, however, set to work to get it admitted into other theatres. Failing in this, he began to compose *Lohengrin*, an opera still more identified with his peculiar views of art. It was about to be produced at Dresden in 1849, when the revolution in Saxony took place. Wagner participated in it, principally because he believed the overthrow of the government, by releasing the theatre from court control, would leave him freer to establish his operatic principles. The revolution was speedily suppressed, and Wagner was exiled. He retired to Switzerland, and lived for some years at Zürich, where he composed *Tristan* and the *Nibelungen*. His principal advocate during this period was the pianist Liszt, who caused several of Wagner's operas to be represented at Weimar, where they gave birth to a new school in art, Liszt being the first and most devoted convert. Through his efforts and those of his followers, Wagner's name now became more widely known than ever. In 1857 his *Tannhäuser*, which seems to have been accepted as his representative work, although he always declares his last the best, was performed at Stuttgart with success. In 1861 it was given at the grand opera in Paris, where it failed completely, only three performances being tolerated. At Vienna, in 1862, it was received with greater favor than had ever before been vouchsafed it. He has recently been pardoned by the king of Saxony, and permitted to return to Dresden.—Wagner's merits are a perfect mastery of the science of music and a thorough acquaintance with its technical laws, which, however, he frequently chooses to disregard. His command of the orchestra is absolute, and no finer instrumental writing than his is extant. His fault, in the view of the public, is an uncompromising adherence to his own peculiar theories. He not only proclaims his own system to be everlastingly true, but he also denounces all other systems as irremediably false. He avoids regular melody as inconsistent with the highest expression of artistic feeling. Apart from his musical compositions, Wagner's literary works have received much attention. They consist mostly of critical reviews of modern music, and analytic illustrations of his own. His *Lettre sur la musique*, published in Paris in 1860, just prior to the production of *Tannhäuser* in that city, brought upon him the severest rebukes, and proved to be one of the causes of the harsh treatment its author received at the opera.

WAGNER, Rudolph, a German physiologist and anatomist, born in Baireuth, Bavaria, in 1805. He studied at Erlangen and Würzburg, and under Cuvier at Paris. Returning to Germany, he practised for a time as a physician at Augsburg, was afterward a tutor and professor of zoology in the university of Erlangen, and in 1840 was chosen to succeed Blumenbach as professor of physiology in the university of Göttingen. Among his numerous works may be mentioned *Beiträge zur vergleichenden Anatomie des Blutes* (Leipsic, 1833); *Prodromus Historiæ Generationis Hominis atque Animalium* (1836); *Beiträge zur vergleichenden Physiologie* (1838); *Lehrbuch der Physiologie* (1839; 4th ed., 1854–'5); *Icones Zootomicæ* (fol., 1841); *Ueber das Verhältniss der Physiologie zu den physischen Wissenschaften* (Göttingen, 1842); *Lehrbuch der Zootomie* (2 vols., Leipsic, 1843–'7); *Handwörterbuch der Physiologie* (6 vols. 8vo., Brunswick, 1843–'53); *Neurologische Untersuchungen* (Göttingen, 1854), &c. He is one of the most eminent opponents of the materialistic school of science in Germany.

WAGRAM, a village of Lower Austria, on the left bank of the Rossbach, 11 m. N. E. from Vienna, celebrated for a victory of Napoleon, July 5–6, 1809, over the Austrians, commanded by the archduke Charles. The loss was very severe and nearly equal on both sides. The immediate result of the battle was the retreat of the Austrians to the heights of Znaym, where after a second engagement an armistice was concluded on July 12, soon followed by the treaty of Schönbrunn. Berthier, for his brilliant share in the victory, was created prince of Wagram.

WAGTAIL, a name applied to some of the European *motacillinæ*, a group of birds of the warbler family, from the remarkable jerking motion of their long tail. They somewhat resemble the larks, having a moderately long, straight, flattened, and slender bill, slightly curved and notched at the tip; wings long and pointed, the secondaries frequently notched at the end, and the tertiaries very long and pointed; tail in some twice as long as the body; tarsi long and slender, toes rather short, and hind claw sometimes very long. They live in meadows and moist fields, are swift runners, and remarkably graceful and rapid fliers; the food consists entirely of insects, which are often taken on the wing as in the flycatchers; they also wade in shallow water; the nest is made on the ground, among grasses and stones, and the eggs are 4 to 6, spotted; the notes are short and shrill, and frequently repeated while feeding. They are handsome and sprightly birds, scattered over the temperate latitudes of the old world, migrating south in winter; there are none of the typical genus *motacilla* (Linn.) in America. In this genus there are short bristles at the gape, 9 primaries, the first 2 the longest, and the tail even. The pied or water wagtail of Great Britain (*M. Yarrellii*, Gould) is elegantly varied with white and black, most so in summer, the back being grayish; it is about 7¾ inches long and 11½ in extent of wings, and was for a long time confounded with the white wagtail of the continent (*M. alba*, Linn.), *la lavandière* of the French; the latter is more grayish above, and white below as well as on the 2 outer tail feathers; throat in the males of both species in summer pitch-black. The gray wagtail (*M. boarula*, Penn.) is bluish gray above, with the rump and lower parts yellow, in summer with a black patch on the throat. These species run about cattle, close to their noses and under their bellies, catching flies on their legs, and worms, insects, and larvæ disturbed by their grazing, and are hence called *bergeronnettes* by the French; they raise 2 broods in a season.—In the sub-genus *budytes* (Cuv.) the hind claw is very long and sharp, making the transition to the titlarks (*anthus*). The yellow wagtail (*M.* [*B.*] *flava*, Linn.) is about 6½ inches long, with the head and hind neck grayish blue, the upper parts yellowish green, and the lower bright yellow; it is common on the continent of Europe, but the green-headed species (*M.* [*B.*] *Rayi*, Cuv.) is much more common in Great Britain.—The titlarks of America, previously described, belong to this family.

WAHABEES, Wahabys, Wahhabis, or Wahhabites, a Mohammedan sect, founded by Abd-el-Wahab in the middle of the 18th century in the country of Nedjed, Arabia, and which, previous to the death of its founder in 1787, had spread over a considerable portion of the Arabian peninsula. (See Arabia, vol. i. p. 740.) In 1805 only Hadramaut and Oman remained free from subjection, Mecca having been taken by the Wahabite sheik in 1803, and Medina in 1804, and both plundered of their immense treasures. The overthrow of the temporal power of the Wahabees was effected in 1818, when their sheik Abdallah, the great-grandson of Saoud, the friend and protector of Abd-el-Wahab, was compelled to surrender to Ibrahim Pasha, the son of Mehemet Ali, and was taken to Constantinople and executed. (See Arabia.) The sect still exists, and numbers among its adherents a large proportion of the Bedouins of central Arabia, but has never recovered its temporal supremacy.—Since the time of Mohammed, no reformer has aimed at so radical a change of the morals, customs, and religious belief of the Moslems as Wahab and his successors, or has carried it so thoroughly into effect. He reduced Mohammedanism to a pure deism; maintained that there had been no man directly inspired of God; that Moses and Jesus were virtuous men, but inferior in the perfection of their character to Mohammed, who however had no claim to be worshipped, since he was not of the divine nature. There was, according to his instruction, no revealed religion, no divine book; the Koran was a good book, indeed, but not a revelation from God; the Mohammedan religion was entitled to be called a divine religion, not as revealed by God to man, but because of its perfection. All reverence for the tomb or the birthplace of Mohammed, or any other saint, was in his view idolatry, and such tombs should be destroyed. Mohammed preached for all nations, and not for the Arabs alone; and the doctrines which he preached were approved of God, and were to be propagated by the sword, and all who would not adopt them or who neglected compliance with them were to be severely punished or put to death. Traditions were not to be regarded as binding on the conscience. Good works were only the consequence of the rule that we should adore God as if he were present to our eyes; and though we cannot see him, we must know that he sees us. The use of wine, opium, or tobacco was sternly prohibited, and the immoral practices in which many of the Mohammedans indulged were forbidden under severe penalties. A tax of $\frac{1}{5}$ to $\frac{1}{20}$ of the income was levied, under the name of alms, on all the members of the sect, for the support of the government and the propagation of their creed; and restless as the Bedouins had always been under taxation, they submitted to this for nearly 75 years. The theocratic system of Abd-el-Wahab contemplated a divided power, the principal authority residing in the temporal chief, but the direction of all religious matters pertaining to the spiritual chief, and in all important matters the two advising together. Saoud, the first temporal chief of the Wahabees, had married the daughter of Wahab, and both the spiritual and temporal headship, after the death of the reformer, centred in the family of Saoud. During the period between 1765 and 1810 the chiefs acquired immense estates from the plunder of rebellious towns and the confiscation of their lands. Most of them afterward fell into the hands of Mehemet Ali.

WAHKIACUM, a S. W. co. of Washington territory, bounded S. by Columbia river; area, about 475 sq. m.; pop. in 1860, 42. Capital, Cathlamette.

WAHLSTAT. See LIEGNITZ.

WAHOO. See ELM.

WAINWRIGHT, JONATHAN MAYHEW, D.D., provisional bishop of the Protestant Episcopal church in the diocese of New York, born in Liverpool, England, Feb. 24, 1792, died in New York, Sept. 21, 1854. His father was English, but on his mother's side he was the grandson of the Rev. Dr. Jonathan Mayhew, a distinguished Congregational minister in Boston, Mass. When he was 11 years old his parents returned to the United States, and in 1812 he was graduated at Harvard college. He remained for some time at that university, engaged in teaching; but having resolved to enter the ministry of the Episcopal church, he studied theology, and in 1816 was admitted to deacon's orders by Bishop Griswold in Providence, R. I. Soon afterward he became rector of Christ's church at Hartford, Conn., where he was ordained priest by Bishop Hobart of New York. In Nov. 1819, he became an assistant minister of Trinity church, New York, but two years later assumed the rectorship of Grace church in the same city. The degree of D.D. was conferred upon him by Union college in 1823, and by Harvard college in 1835. After much urging, Dr. Wainwright consented in 1834 to take the rectorship of Trinity church, Boston; but 3 years later he returned to his early connection with Trinity parish, New York, having St. John's chapel more especially in his charge. In 1848–'9, Dr. Wainwright, principally on account of his health, visited Europe and the East, and after his return accompanied, in June, 1852, the delegation from the American Episcopal church to attend the celebration at the close of the third jubilee year of the society for the propagation of the gospel in foreign parts. The university of Oxford conferred upon him, on this occasion, the degree of D.C.L. He was elected provisional bishop of the diocese of New York at the beginning of Oct. 1852, and was consecrated in Trinity church, Nov. 10, 10 bishops being present. Bishop Wainwright entered upon his new field of labor with a zeal and devotion which, in the feeble state of his health, hastened his death. As a pulpit orator he stood among the first of his day, being noted for his graceful and impressive manner, no less than for the force and vigor of his teachings. He was the author of a number of occasional sermons, a controversy with the Rev. Dr. Potts on episcopacy, and 2 volumes of travels in Egypt and Palestine. He also edited Bishop Ravenscroft's memoirs and sermons, and the life of Bishop Heber.

WAITZEN, or WAIZEN (Hun. *Vácz*), a town of Hungary, in the county and 20 m. N. from the city of Pesth, on the left bank of the Danube; pop. about 13,000. It is situated in a fertile plain, is the see of a Roman Catholic bishop, has a fine cathedral, an episcopal palace, and various educational and benevolent institutions, including a deaf and dumb asylum, and carries on a considerable trade, especially in wine. It is an old town, and conspicuous in the history of Hungary. Beside several battles in preceding periods, two were fought there by the Hungarian army in 1849, on April 10 against the Austrians, and on July 15 against the Russians.

WAIWODE. See WAYWODE.

WAKE (Anglo-Sax. *wæc*), a holiday festival once universally celebrated in the country parishes of England, and still annually kept up in some secluded districts. Wakes originated at the period of the conversion of the Saxons to Christianity, and were established to commemorate the birthday of the saint to whom a particular church was dedicated, and the anniversary of the dedication. As the ecclesiastical day was then reckoned from sunset to sunset, the festival commenced on the evening previous to the day itself, and during the night the people customarily performed their devotions in the churches, whence the name wake, which signifies strictly the waking or vigil preceding the festival, but subsequently included both. Wakes gradually became the occasions of boisterous and even licentious merrymakings; and where the saint was of high repute, the inhabitants of neighboring parishes flocked in large numbers to his annual festival. So injurious did these frequent celebrations prove to public morality and industry, that in 1536 Henry VIII. by an act of convocation ordered the festival of the saint's day to be discontinued, and that of the dedication of the church to be celebrated in all the parishes on the first Sunday of October. This gradually fell into desuetude, the saint's day being the more popular festival, and the latter still subsists in the form of a village wake.—In Ireland, according to Miss Edgeworth, "a wake is a midnight meeting, held professedly for the indulgence of holy sorrow, but usually converted into orgies of unholy joy." It occurs upon the death of one in humble circumstances, whose body, laid out and covered with a sheet, except the face, which is exposed, and surrounded by lighted tapers, is "waked" by the friends and neighbors of the family. After much vociferous lamentation over the deceased, the company are regaled with good cheer, of which whiskey forms an important part; and the wake often terminates in noisy if not riotous demonstrations of enjoyment.

WAKE, a central co. of North Carolina, drained by the Neuse and Little rivers; area, 1,010 sq. m.; pop. in 1860, 28,627, of whom 10,733 were slaves. The surface is hilly and the soil fertile. The productions in 1850 were 681,390 bushels of Indian corn, 80,033 of oats, 54,126 of wheat, 180,960 of potatoes, 109,142 lbs. of butter, 14,820 of tobacco, 5,096 tons of hay, and 2,059 bales of cotton. There were 15 grist mills, 16 saw mills, 2 tanneries, 4 semi-weekly and 5 weekly newspapers, 34 churches, and 2,001 pupils attending public schools.

Granite and plumbago are found. The county is intersected by the North Carolina and the Raleigh and Gaston railroads. Capital, Raleigh.

WAKE, William, an English prelate and author, born in Blandford, Dorsetshire, in 1657, died in Lambeth, Jan. 24, 1737. He was educated at Christchurch, Oxford, and after entering into holy orders went to France. In 1685 he returned to England, was soon afterward made preacher to the society of Gray's Inn, and published in 1686 an "Exposition of the Doctrine of the Church of England," in answer to Bossuet's "Exposition of the Roman Catholic Faith." This tract, generally called "Wake's Catechism," was the occasion of a long controversy in which he published two defences of it. In 1689 he was made canon of Christchurch, Oxford, and in 1693 rector of St. James's, Westminster. In the latter year he published "An English Version of the Genuine Epistles of the Apostolic Fathers," of which an improved edition appeared in 1710. He now engaged in the celebrated controversy in regard to the convocation, and on this subject published in 1697 a tract and another in 1698, and in 1703 an elaborate work on "The State of the Church and Clergy in England." In 1701 Dr. Wake had been installed dean of Exeter, in 1705 he was created bishop of Lincoln, and in 1716 he was made archbishop of Canterbury. He was one of those who opposed the repeal of the schism and occasional conformity bill (1718), and of the corporation and test acts (1719). In 1718 he engaged in a correspondence with Dupin, the ecclesiastical historian, and with others of the Jansenist party in France, in reference to a union between the church of England and the church of that country. His library and his collection of coins, the whole valued at £10,000, he bequeathed to Christchurch, Oxford. After his death a collection of his "Sermons and Charges" was published in 3 volumes.

WAKEFIELD, Gilbert, an English theologian and scholar, born in Nottingham, Feb. 22, 1756, died Sept. 9, 1801. The son of the rector of the parish of St. Nicholas, he was sent to school from his 4th year, made rapid progress at the free grammar school of Nottingham, at a school in Wilford where he was confined 11 hours a day, and at two other institutions, till in his 17th year he was sent to Jesus college, Cambridge. He devoted himself especially to classical studies, avoided algebra and logic, which he declared odious to him beyond conception, began Hebrew, and at once discovered what he terms the stupidity of the use of points, obtained a scholarship, was graduated in 1776 with the rank of second wrangler, and soon after gained the second chancellor's gold medal, and was elected to a fellowship in his college. Remarked already for a singular mixture of habits, he would in the midst of his studies not read a page for months together, but ramble about the fields, angle, and play cricket; and while for 5 years diligently rising by 5 o'clock, winter and summer, he declares that he never breakfasted, dined, or supped alone half a dozen times during the period, "enjoying society, from the first, beyond measure." In 1776 he published a volume of Latin *Poemata;* in 1778 was ordained deacon, though deviating from the standard of the Anglican creed, and signing the articles with so much reluctance that he afterward called it the most disingenuous act of his life; and was appointed to a curacy in Stockport, and soon after in Liverpool. He pursued his theological studies with increasing zeal and dissatisfaction, vacated his fellowship by marriage in 1779, became in the same year classical master of a dissenting academy at Warrington, and began his career as a controversialist by a series of writings involving attacks upon the doctrines of the established church. He made himself familiar with the Hebrew, Syriac, Chaldee, Samaritan, and other languages, and published in 1781 "A New Translation of the First Epistle of Paul the Apostle to the Thessalonians," "A Plain and Short Account of the Nature of Baptism," and an "Essay on Inspiration," and in 1782 "A New Translation of the Gospel of St. Matthew." After the dissolution of the academy of Warrington in 1783, he lived successively at Bramcote, Richmond, and Nottingham; published in 1784 the first volume of "An Inquiry into the Opinions of the Christian Writers of the three first Centuries concerning the Person of Jesus Christ;" and preached occasionally, till in 1786 he left the church and became its open assailant. He resided 6 years at Nottingham, instructing a few pupils, and producing among other works "Remarks on Dr. Horsley's Ordination Sermon" (1788); "Four Marks of Antichrist" (1788); "A New Translation of those parts of the New Testament which are wrongly translated in our Common Version" (1789); "Remarks on the Internal Evidence of the Christian Religion" (1789; enlarged in 1793); *Silva Critica* (1st part, 1789; 4 other parts appeared, 1790–'95), intended for the illustration of the Scriptures from the Greek and Roman writers; and "Cursory Reflections on the Corporation and Test Acts" (1790). In 1790 he was called to the classical professorship in the dissenting academy at Hackney, but, though his lectures were generally admired, resigned it in the following year, his extreme dissent causing disagreement between him and his colleagues. He however continued to reside at Hackney, as author and editor, and among his publications were a "Translation of the New Testament, with Notes" (3 vols., 1791; 2d ed., 1795), in which he adhered to the received translation where he deemed it correct; "An Inquiry into the Expediency and Propriety of Public or Social Worship" (1791), which was twice reprinted, and called forth several answers; "Memoirs" of his life (1792), continued by Rutt and Wainewright (1804); and several political and theologico-political pamphlets relating to the ideas and events of the period of the French revolution, as "The Spirit of Christianity compared with the Spirit of the Times," "An Examination of 'The Age of Reason,'" and a philippic against the war with France, entitled "Remarks on the General Orders of the Duke of York," all published in 1794. He edited a complete edition of Horace (1794), a selection of Greek tragedies (1794), a volume of poetical translations (1795), the poems of Bion and Moschus (1795), the works of Virgil (1796), Pope's translation of the Iliad (11 vols., 1796), and the *De Rerum Natura* of Lucretius (3 vols., London, 1796–'7), characterized by Dyer as "one of the most splendid editions of a classic author that ever issued from an English press," and by the publication of which he half ruined himself, though it was reprinted after his death. He also wrote "A Reply to the Letter of Edmund Burke, Esq., to a Noble Lord" (1796); "A Letter to William Wilberforce" (1797); a tract against the "Hecuba" of Porson, which called forth the satirical toast from the latter: "What's Hecuba to him or he to Hecuba?" and "A Reply to some Parts of the Bishop of Llandaff's Address to the People of Great Britain" (1798), in which he exults at the expected French invasion and conquest of England, and which occasioned a prosecution first of his publisher and then of himself, and caused his imprisonment for two years in Dorchester gaol. His friends and partisans raised a subscription for him of about £5,000. He printed privately but did not publish his "Defence," and while in gaol produced an imitation of the 10th satire of Juvenal, a translation of some essays of Dion Chrysostomus, and a volume on the hexameter verse entitled *Noctes Carcerariæ*. After his release he lectured in London on the Æneid, and at the time of his death had made considerable collections for a Greek-English lexicon. "Condemned as an enraged Jacobin," says Disraeli, "by those who were Unitarians in politics, and rejected because he was a Unitarian in religion by the orthodox, poor Wakefield's literary labors were usually reduced to the value of waste paper." His scholarship was very defective, though it was complimented by Heyne, Jacobs, and moderately by Dr. Parr. "He became bigoted," says a reviewer, "to almost every paradox which had once possessed his very eccentric understanding. He was as violent against Greek accents as he was against the Trinity, and anathematized the final *n* as strongly as episcopacy. Whatever coincided not with his ideas of rectitude, justice, elegance, or whatever else it might be, was to give way at once and to be rescinded at his pleasure, on pain of the most violent reprehension to all opponents. These exterminating sentences were also given with such precipitancy as not to allow even a minute for consideration. By faults original or habitual, his sincerity became offensive, his honesty haughty and uncharitable, his intrepidity factious, his acuteness delusive, and his memory, assisted by much diligence, a vast weapon which his judgment was totally unable to wield."

WAKEFIELD, Priscilla (Trewman), an English writer on education, and one of the first proposers of savings banks, born in 1750, died in Ipswich in 1832. She first became known as an author by works entitled "Juvenile Improvement" (1795); "Leisure Hours" (2 vols., 1796); "Introduction to Botany" (1796); "Mental Improvement" (3 vols., 1797); "Reflections on the Present Condition of the Female Sex, with Hints for its Improvement" (1798); "Juvenile Traveller" (1801); and "Familiar Tour through the British Empire" (1804). In 1798 she founded at Tottenham, near London, a "children's bank," and in 1804 a savings banks for adults. These savings banks were superseded by others, better planned; and meanwhile Mrs. Wakefield continued her efforts for the young, and published "Domestic Recreation" (1805); "Excursions in North America" (1806); "Sketches of Human Manners" (1807); "Variety" (1809); "Perambulations in London and its Environs" (1810); "Instinct Displayed" (1811); "The Traveller in Africa" (1814); "An Introduction to the Knowledge of Insects" (1815); and "The Traveller in Asia" (1817).

WAKUAFI, a nomadic tribe of E. Africa, occupying the plains of the interior from lat. 2° N. to lat. 4° S. They are tall and slender, with handsome features and rather light complexions. They seem to be of Arabic origin, and their language bears some affinity to the Cushite Arabic. In their mode of life they bear a striking resemblance to the nomadic Tartars. They are a warlike race, and in their battles carry, beside the spear and shield, a formidable club of hard wood, which they hurl with great precision at the heads of their enemies at a distance of from 50 to 70 paces, and with an almost invariably fatal effect. When they encamp for any considerable time on a plain, they construct huts covered with cowhides or grass, and surround their village with ditches and thorn hedges. The subdivisions of age are peculiar to them among the African tribes. The *engera*, children under 14, remain at home with their mothers; the *leiok*, youths from 14 to 20, are devoted to the national games and the chase; the *elmoran*, young men from 20 to 25, are the warriors; the *khieko*, men from 25 to 45, are usually married, and engage partly in war and partly in hunting; while the aged men, *eekiminsho*, remain at home and are the councillors of the nation. At the head of the nation is the *oilkibroni* or chief, who, in connection with the *oilebon* or magician, rules the people with a very absolute sway; but the office is not hereditary, and he is occasionally deposed. Circumcision is generally practised. They have a few slaves among themselves, but do not traffic in slaves, and kill all their captives taken in war except young girls. They hold however several of the neighboring tribes in subjection, compelling them to hunt and manufacture weapons for them. They clothe themselves in leather, and in the preparation of this their women exhibit considerable skill. They have a vague idea of a supreme being, whom they name Engai, who dwells on the White or Snow mountains. They believe also in an intermediary being, called Neiterkob, of whom their notion is much clearer; he acts as a mediator between them and Engai, and to him they pray for whatever they want, and believe him to have been in some sense the founder of their race. Their number can only be conjectured, but enough is known to make it certain that they are the most formidable of the nations of E. Africa.—See Krapf, "Travels and Researches in Eastern Africa."

WAKULLA, a S. co. of Florida, bordering on Appalachee bay, bounded W. by the Ocklockonee river, and drained by the Wakulla and St. Mark's rivers; area, 576 sq. m.; pop. in 1860, 2,835, of whom 1,167 were slaves. The surface is generally level and the soil fertile. The productions in 1850 were 40,216 bushels of Indian corn, 14,126 of sweet potatoes, 18,686 lbs. of rice, 3,171 galls. of molasses, 20 hhds. of sugar, and 480 bales of cotton. There were 2 turpentine distilleries, 1 newspaper office, 7 churches, and 20 pupils attending public schools. The county is intersected by the Tallahassee railroad. Capital, Newport.

WALCHEREN, the westernmost island of the Dutch province of Zealand, lying in lat. 51° 30′ N., long. 3° 30′ E., between the E. and W. mouths of the Scheldt; area, 110 sq. m.; pop. about 45,000. It is surrounded by dikes, and is very fertile. Chief towns, Middelburg and Flushing. On July 29, 1809, a British expedition of 175 armed vessels and 41,000 soldiers set sail under Lord Chatham, to capture Antwerp and divert Napoleon from his triumphant campaign in Austria, and landed Aug. 10 on Walcheren and the neighboring islands. Instead of profiting by his first success and rapidly pushing on against Antwerp, which must have fallen before a vigorous onset, Chatham stopped to besiege Flushing, which surrendered after a bombardment, on Aug. 16. Meanwhile the French put Antwerp into a state of defence, and collected a powerful army on the Scheldt. The English, who were all withdrawn to Walcheren about Sept. 1, were attacked by malaria fever, of which 7,000 of them died. The works at Flushing were blown up by the middle of November, and before Christmas the island was finally evacuated.

WALCKENAËR, Charles Athanase, baron, a French savant and author, born in Paris, Dec. 25, 1771, died there, April 27, 1852. At the age of 12 he translated Horace and Virgil into English prose; at 17 he went to study at Glasgow and Oxford; then served as director of transportation in the army of the Pyrénées in 1793; afterward studied in the polytechnic school; and became a mayor of Paris in 1816, and prefect of the department of Nièvre in 1824 and of Aisne in 1826. In 1830 he finally left the public service, and in 1840 he became perpetual secretary to the academy of inscriptions. He was a voluminous writer on very many subjects. His first publication was an *Essai sur l'histoire de l'espèce humaine* (1798), and he afterward wrote two romances, all of no value. In 1802 he published an *Histoire abrégée des insectes des environs de Paris*, and in 1805 a *Tableau des aranéides*, an important contribution to entomology. Among his remaining works, the following are especially worthy of attention: *Le monde maritime* (4 vols. 8vo., 1819); *Nouvelle collection des relations des voyages* (21 vols., 1826–'31); *Analyse géographique des itinéraires des anciens* (3 vols. 8vo., 1839); *Histoire de la vie et des poésies d'Horace* (1840); and *Mémoires sur Madame de Sévigné* (5 vols., 1842–'52), which he left incomplete.

WALDECK, a small principality in the N. W. of Germany, embracing Waldeck proper, lying between Hesse-Cassel and the Prussian province of Westphalia, and the county of Pyrmont, between Prussia and Hanover; total area, 461 sq. m.; pop. in 1858, 57,550, of whom 50,905 were in Waldeck and 6,645 in Pyrmont, and nearly all are Lutherans. The principality is divided into 4 circles, Tuiste, Eisenberg, Eder, and Pyrmont. It is mountainous and woody, drained by the Eder and other small tributaries of the Weser, and possessing a poor and stony soil, which is however very carefully cultivated, and yields sufficient grain and potatoes for home consumption. Large flocks of sheep producing fine wool are raised in the principality, and butter and cheese are made for exportation. There are mines of iron and copper, marble and alabaster quarries, and salt springs. Pyrmont consists of a small valley watered by the Emmer, and tolerably productive, but is principally noteworthy for its mineral spring, which has a high reputation and extensive patronage.—Waldeck is a constitutional principality, its present constitution having been adopted in 1852. The executive power is vested in the prince alone; the legislature consists of a single chamber, a diet of 15 members. It occupies the 29th rank in the federal diet, has one vote in the *plenum*, and in the ordinary assembly of the confederation shares the 16th vote with Reuss, Lippe, and Liechtenstein. Its revenue for 1861 was $311,832.50, and its expenditure $310,677.50. The debt of the principality is about $400,000. Its federal contingent is 866 men. The capital is Korbach, but the diet meets annually at Arolsen, the residence of the prince. The only other town of any consequence is Waldeck, on the Eder, 10 m. S. E. of Korbach, with about 1,000 inhabitants.—The princes of Waldeck trace their origin to Witikind. They were originally counts, but became princes in 1682. Two of them have been conspicuous in history. I. George Frederic (born in 1620, died in 1692) inherited the title of count from one of the oldest families of Germany. He took service under the emperor Leopold I. in Holland, and was created by his patron prince of the empire and field marshal. He commanded the Franconian troops at the siege of Vienna by the Turks in 1683. Returning to Holland, he was appointed marshal-general of the army of the United Provinces, and was defeated by Marshal Luxembourg at the battle of Fleurus in 1690. II. CHRISTIAN AUGUSTUS (born in 1744, died at Lisbon in 1798) entered the service of Austria in his youth, rose rapidly in the army, distinguished himself in the war against the Turks, was appointed lieutenant-general in the war against France in 1792, lost an arm at the siege of Thionville, took part in 1793 in the attack on the lines of Weissembourg, and captured Fort Louis. In 1794 he succeeded Gen. Mack as quartermaster-general of Flanders, and in 1797 was appointed to the chief command of the Portuguese army.

WALDENSES, or VAUDOIS, a Christian denomination in Italy. The name is commonly derived from Petrus Waldus, Peter Waldo, or Pierre de Vaux, an opulent citizen of Lyons (about 1170), who is regarded as their founder. Others claim for them an older origin, deriving their name from the Latin *vallis*, valley, so that it would denote "inhabitants of the valleys;" but nearly all recent historians reject both the latter derivation of their name and their early origin. The opinion, in particular, that they had had an apostolical succession of bishops, has been generally given up; yet it is considered probable that in some of the Alpine valleys there had been maintained ever since the times of Bishop Claudius of Turin a spirit of opposition to some practices and to the general condition of the Roman Catholic church, not substantially differing, perhaps, from the subsequent preaching of the Waldenses. Petrus Waldus, by reading the Bible and the early church writers, conceived an ardent desire to bring back the church, which in her external appearance seemed to him utterly corrupt, to primitive and apostolical purity. He gave all his possessions to the poor, began preaching, and collected a body of associates, who were commonly called the "Poor of Lyons," Leonistæ (from the Latin name of Lyons), Sabatati (from their wearing wooden shoes or sandals), or Humiliati (from their humility). They had no design of seceding from the church, and when the archbishop of Lyons commanded them to be silent, they appealed to Pope Alexander III., who likewise forbade their meetings (1179). Waldus continued however to preach, teaching that they must obey God rather than man, and in 1184 he and his followers were formally excommunicated by Pope Lucius III. His views spread in France, Italy, and Bohemia, and his adherents became especially numerous in Provence and in the valleys of Piedmont. In 1242 they were again condemned by the synod of Tarragona, and a large number of them were put to death. Those living in the valleys suffered especially from persecution, and under Sixtus IV. a crusade was preached against them. In Bohemia they afterward united mostly with the Hussites, especially the Taborites, and with the Bohemian Brethren; a union which not only led to a modification of their views, but has also involved their history in greater obscurity, as the historians of the middle ages did not mark the distinction between the Bohemian Waldenses and those of other countries. The persecution of the Waldenses of Piedmont continued with but rare interruptions throughout the 16th and 17th centuries. In 1680 they were attacked by a French and Italian army; 3,000 were killed, 10,000 imprisoned, and 3,000 of their children distributed in Catholic towns and villages. In the following year they received permission to emigrate, and about 5,000 left the valleys for Switzerland, Holland, Brandenburg, Hesse, and Würtemberg. In the last named country full freedom of religious worship was guaranteed to them, and they still survive in 10 congregations, with about 1,600 souls, forming at present part of the state church, but retaining their own rites. In 1694 the duke of Savoy invited the fugitives to return, but in 1730 they suffered from a new persecution. Napoleon gave to their clergy for their support landed property, of which they were again stripped in 1816; but the king of Sardinia, at the instance of the Prussian government, gave to each of their ministers a small fixed salary. About 1826 the Prussian government began to interest itself more actively in their behalf, and to aid them in the erection of churches and schools. Still they continued to be excluded from all civil and military offices until 1848, when Sardinia granted them full religious and ecclesiastical liberty and equality of civil and political rights with the Roman Catholics. The successful revolution of 1859–'60, which enlarged Sardinia into the kingdom of Italy, gave them the same rights throughout the Apennine peninsula, except in Rome and Venice. Until 1848 they were confined to 3 retired valleys of the Cottian Alps, Luserna, Perosa, and San Martino; but since 1848 they have organized new congregations in other towns of Sardinia, and since 1858 in all parts of Italy. In the valleys they count 15 congregations with about 20,000 souls; outside of them they had in 1861 congregations at Pignerol, Turin, Genoa, Nice, Palermo, Aosta, Milan, Brescia, Leghorn, Pisa, Florence, Casale, and Cormayeur, with a number of stations which are occasionally visited. In 1848 Turin became the centre of many of their operations; they had there a printing press, a bi-monthly periodical, a depository of Bibles and religious tracts, a committee for the evangelization of Italy, 3 day schools, and several other religious associations. When all Italy was opened to them, they fixed upon Florence as the centre of their denomination, and consequently the theological seminary was removed thither in 1860, and the printing press with the publication of their peculiar organ in 1862. They have been especially active since 1858 in the publication of religious books, and in 1861, in order to extend this field of their work, an Italian evangelical publication society was formed.—In doctrine and church constitution, the Waldenses approach nearest to the Reformed church of France. They recognize the Bible as their only rule of faith, and their "Confession of Faith" published in 1655 as the most correct expression of biblical theology. With regard to the Lord's supper they agree with the Calvinists, but they have not adopted the doctrine of absolute predestination. At their divine service they use the Bible, and especially the Psalms. Their synod consists of all the ministers and twice their number of lay delegates, who however cast only an equal number of votes with the clergy. Formerly the synod met every 5th year, but now the meetings are annual. Every congregation has a consistory composed of the minister, an elder, and a deacon. Above these local consistories is placed a supreme consistory, called "the Table," and composed of 3 clergymen and 2 laymen.—On the history of the Waldenses, see Monastier, *Histoire de l'église Vaudoise* (2 vols., Geneva, 1847); Baird, "The Waldenses, Albigenses, and Vaudois" (Philadelphia, 1848); Dieckhoff, *Die Waldenser im Mittelalter* (Göttingen, 1851); and Herzog, *Die romanischen Waldenser* (Halle, 1853).

WALDO, a S. co. of Maine, bounded on the E. by Penobscot river and bay, and drained by St. George and Marsh rivers and affluents of the Sebasticook; area, 812 sq. m.; pop. in 1860, 38,447. The surface is undulating and the soil fertile. The productions in 1850 were 130,899 bushels of Indian corn, 38,191 of wheat, 246,738 of oats, 232,340 of potatoes, 134,920 lbs. of wool, 927,791 of butter, and 69,552 tons of hay. There were 47 cod and mackerel fisheries, 18 grist mills, 67 saw and planing mills, 16 ship yards, 12 lime kilns, 18 stave and spoke factories, 17 tanneries, 2 woollen factories, 2 newspaper offices, 61 churches, and 17,934 pupils attending public schools. A large export trade is carried on, through Penobscot river and bay, in timber, lime, staves, &c. Capital, Belfast.

WALDO, Daniel, an American clergyman, born in Windham, Conn., Sept. 10, 1762. He was drafted as a soldier in the army in 1778, and was arrested and captured by the tories at Horseneck and carried to New York, where he was confined in the sugar house for two months, and then exchanged. At the age of about 20 he began to prepare for college, was graduated at Yale in 1788, studied theology under Dr. Hart of Preston, and on May 24, 1792, was ordained pastor of the Congregational church in West Suffolk, Conn. Here he continued till 1809, when he resigned his charge, having previously for some time acted as a missionary in the states of Pennsylvania and New York. In 1810-'11 he preached at Cambridgeport, Mass., after which he served as a missionary in Rhode Island till 1820; then preached for a while at Harvard; then was settled for 12 years at Exeter, Conn; and has since resided in the state of New York, without any stated charge. Since he was 96 years old he has served two years as chaplain of congress. At the age of 100 his bodily and mental powers still (1862) retain nearly their full vigor. He enjoys life as well, walks as rapidly, converses as intelligently, and preaches as acceptably, as when he was half a century younger.

WALDO, Peter. See Waldenses.

WALDOBOROUGH, a town and port of entry of Lincoln co., Me., on Broad or Muscongus bay, at the mouth of Muscongus river, 55 m. E. from Portland; pop. in 1860, 4,568. Within the town limits are 8 islands of considerable size, beside several smaller ones. It contains 2 banks, a custom house, 9 churches, and many mills for various purposes, the town possessing abundance of water power. Much ship building is carried on, the ownership of the vessels generally remaining in the builders. In 1860, 18 vessels measuring 2,527 tons entered from foreign countries, and 21 vessels measuring 4,071 tons cleared for foreign ports. The town was first settled by German immigrants, to the number of 1,500, through the efforts of Samuel Waldo, who had obtained from George II. a grant of land of great extent called the Waldo Patent. The first of them arrived in 1748, and at an early period they erected a commodious church for the Lutheran worship, in which the German language was used till within the last 20 years. Waldoborough was incorporated in 1773.

WALES (Welsh, *Cumrie*, the land of the Cymri; Lat. *Cambria*), a principality of Great Britain, occupying the S. W. portion of the island, and bounded N. by the Irish sea, E. by the English counties of Chester, Salop, Hereford, and Monmouth, S. by Bristol channel, and W. by St. George's channel. Its English name is akin to the Saxon *wealh*, a foreigner, wanderer (Ger. *wallen*, to wander); it is etymologically the same as the name of the Swiss canton Valais, once also the home of a Celtic people; while in the German, *Wälschland* or Welshland is to this day a common name of Italy. Its length from N. to S. is 140 m. and its breadth about 90 m. It is divided into 12 counties, whose area, population in 1851 and 1861, and capitals, are as follows:

Counties.	Area in sq. m.	Population.		Capitals.	Population.
		1851.	1861.		
Anglesea....	302	57,327	54,546	Beaumaris..	3,000
Brecknock...	754	61,474	61,627	Brecon......	6,000
Caermarthen.	947	110,632	111,757	Caermarthen	11,000
Caernarvon..	579	87,870	95,668	Caernarvon.	9,000
Cardigan....	693	70,796	72,255	Cardigan....	4,000
Denbigh.....	603	92,583	100,862	Denbigh....	6,000
Flint........	289	68,156	69,870	Mold........	3,000
Glamorgan..	660	231,849	317,751	Cardiff......	18,000
Merioneth...	602	38,843	38,888	Dolgelly....	2,000
Montgomery.	755	67,335	67,075	Montgomery	1,000
Pembroke...	610	94,140	96,093	Pembroke...	10,000
Radnor......	425	24,716	25,403	New Radnor	2,300
Total......	7,219	1,005,721	1,111,795		

The other considerable towns of the principality are Merthyr Tydvil and Swansea in Glamorganshire, Haverford West in Pembrokeshire, Holyhead on Holyhead island, Llanelly, Welshpool, Wrexham, Bangor, Holywell, Llangollen, Neath, Newton, Vawr, and Hawarden.—Wales has about 300 m. of coast line, 3 of its sides being washed by the British waters. The estuary of the Dee at the N. E. forms the first indentation in the coast line, and is succeeded by the Menai strait, which separates the island of Anglesea from the mainland; S. of this, and at the N. W. of the principality, is Caernarvon bay; separated from the latter by the long peninsula of Caernarvon, terminating in Brarch-y-Pwall head, is Cardigan bay. St. Bride's, a small bay in the S. W. part of Pembrokeshire, Caermarthen bay, Swansea bay, and the broad estuary of the Severn, are the other principal indentations of the coast. The principal rivers of Wales are the Severn and the Dee, both in the E., and both having their source and their embouchure in Wales, though a considerable portion of their course is in England. Beside these, there are on the W. side numerous small streams descending from the mountains, such as the Clwyd, Conway, Dovey, Rheidiol, and Ystwith, the two last named uniting and discharging their waters into Cardigan bay; the Teify; the Cleddy and Cleddau, which flow into the head of Milford haven; the Towy, Bury, Ebry, and Taf. The Romney, forming a part of the boundary between Wales and England, and the Usk and Wye, which rise in the E. and pass into England, are the only other streams of any importance. A few of these unite and form estuaries which are navigable for a short distance, but the streams themselves are mostly mere mountain torrents. There are many small lakes or ponds, but none of considerable size.—Nearly the whole principality is covered with mountains; the island of Anglesea and portions of Pembroke and Glamorganshire are the only exceptions. The Cambrian range, as it is designated, is considered as an offshoot of the Pennine range, which forms the great watershed of the N. of England. It consists of two parallel ranges, one following the N. and the other the S. coast of Wales, and connected by a central range running from N. to S. The northern range contains the highest mountains in S. Britain. Its culminating points are Snowdon in Caernarvonshire, 3,571 feet high (the highest summit of England or Wales), Caern-y-Llewellyn, and Caern-y-David. The central chain has Cader Idris, 3,550 feet, Plynlimmon, and Arran Fowdy, all in Merionethshire; and the southern chain culminates in Brecknock-Beacon in Brecknockshire, 2,862 feet high. The northern chain is frequently called the Snowdon chain; the central has the name of Berwyn, and the southern of Black mountains. From these principal chains spurs of less elevation extend to the limits of the principality.—Wales is a region composed in chief part of palæozoic formations, broken in upon in a few localities by rocks of igneous origin, with a few limited districts of metamorphic schists, and of azoic rocks referred to the cambrian division. The secondary or mesozoic division is represented by a narrow belt of the new red sandstone in the N. E. county of Denbigh, and of the same formation overlaid by strata of the lias in the S. extremity of Glamorganshire on Bristol channel. The W. portion of Wales consists of the more ancient formations, chiefly slates, sandstones, and conglomerates of the lower silurian formation, which range in a N. E. and S. W. direction. From the coast of Pembrokeshire ranges of igneous rocks extending N. E. alternate in narrow bands with the slates; and in the N. W. counties of Anglesea, Caernarvon, and Merioneth eruptive rocks, mostly of trappean character, are much more largely developed, irregularly disposed in the same general direction among the lower silurian strata. In Anglesea the prevailing rocks are of metamorphic character, among which are found large exposures of the carboniferous limestone, including a narrow but productive belt of the coal measures. East of the great belt of lower silurian, upper silurian strata of the Wenlock group are traced in an irregular line of outcrop from Denbighshire S. through the E. part of Montgomeryshire and Radnorshire, terminating toward the S. W. in a long narrow strip in the S. part of Caermarthenshire. To the S. E. of this is a great exposure of the old red sandstone, which occupies Brecknockshire and part of Monmouthshire, spreading over the adjoining county of Hereford in England. It extends W. in a narrow belt on the borders of Caermarthenshire and Glamorganshire, forming the N. boundary of Caermarthen bay. A southern limb of this formation passes through Newport and Cardiff near the mouth of the river Severn, and, together with the carboniferous limestone, which overlies it, appears on the peninsula W. of Swansea bay and of that forming the S. extremity of Pembrokeshire. Between these two arms of this older formation lie the coal fields of South Wales, the one occupying the greater part of Glamorganshire and known as the South Welsh coal basin, and a narrower one continuing the same range on the other side of Caermarthen bay through the Pembroke peninsula to St. Bride's bay. Another coal formation is traced along the borders of the river Dee in the N. E. of Flintshire, and extends S. from the upper part of the estuary of that river past Mold, Wrexham, and Oswestry, nearly to the banks of the Severn in the N. W. corner of Montgomeryshire. In or near this coal field are worked numerous mines of coal, iron, and lead.—Wales abounds in useful minerals of great variety. Anglesea in the N. W. extremity is productive in copper and lead ores, the latter containing silver sufficient to render its extraction profitable. The Parys copper mine was at one time one of the most valuable mines in the world. In Caernarvonshire are the great quarries of roofing slate, of which particular mention is made in the article Slate. Denbighshire, from its various geological formations, which range from the lower silurian to the new red sandstone, is productive in a great variety of ores and minerals. It exports roofing slates, paving flags, and immense quantities of limestone as a flux for the blast furnaces in England. Beds of iron ore and coal are worked at Chirk, Ruabon, Minera, and Brymbo. There are also lead mines in this and in the adjoining county of Flint. The latter is also rich in coal, iron, and zinc mines, and limestone quarries. The lead smelting works at Bagillt are among the most extensive in the world. Lead mines belonging to Earl Cawdor are worked in the N. E. part of Caermarthenshire, in quartzose rocks which alternate with slaty schists of the lower silurian. In the same part of Wales, 10 m. W. of Llandovery, are the gold mines of Gogofau, in the same geological formation. These were worked by the ancient Romans to a considerable extent, and the lofty galleries which they constructed in the rock are still to be seen. Murchison, in his "Siluria," says: "That enterprising people evidently derived gold from portions of these vein stones. Many gold ornaments have in fact been found at the adjacent Roman station of Cynfil-Cayo, with traces of aqueducts which were built probably to convey water to wash the gold. Even the grindstones and troughs used in abrading the hard matrix are yet visible." These mines have not been worked in modern times. In North Wales, another locality of ancient gold mines is found in Merionethshire, N. of Dolgelly, which has been worked of late years also to a moderate extent. The vein stones are white saccharoid quartz, and contain gold in particles distinctly visible. The lodes contain small quantities of copper ore and galena. The rocks which contain them are talcose and chloritic schists traversed by trap dikes, and near large masses of eruptive rocks. The coal field of Glamorganshire is one of the most important mineral districts in the world. Its mines of bituminous coal and anthracite are of great extent and richness, and near them are found vast deposits of iron ore and fire clay, and the basin is encircled by an outcrop of the millstone grit and carboniferous limestone. Thus it is provided with all the materials required for carrying on the manufacture of iron upon the largest scale. In this small district more iron is manufactured than in all the United States, or about ¼ of that made in Great Britain. (See Iron Manufacture, vol. ix. p. 608.) The bituminous coal of this region is carried in large quantity to Cornwall for the supply of the numerous steam engines of that district, and the products of the copper mines are returned to South Wales to be smelted in the great establishments at Swansea.—The climate is moderate and equable, though somewhat cold, especially in the districts which are most mountainous. It is characterized by excessive humidity; the average annual fall of rain is 45.5 inches. The soil is fertile in the valleys, but often barren on the hills, though affording tolerable pasturage. The principal vegetable products are wheat, which yields abundantly in the more fertile valleys and plains, and other cereals, nutritious grasses, and some fruits. Agriculture is in a backward condition, though many improvements have been introduced within a few years. The domestic animals of the country are generally of good quality, though of small size. The Hereford cattle are preferred. A small active breed of ponies, the "Merlins," are reared in considerable numbers. Small hardy sheep are raised in the mountainous districts.—There are in the vicinity of Cardiff, near Newport, and on the island of Anglesea, as well as in other parts of Wales, numerous remains of the druidical age, called *cromlechs*, some of them of great extent and composed of stones of immense size; and evidences of the occupation of some portions of the country by the Romans are found in the ruins of camps, walls, &c., and in the Roman coins occasionally exhumed.—The greater part of the inhabitants are of Celtic origin, and are called by their English neighbors Welsh, but by themselves Kymry or Cymri. In some of the larger towns there are considerable numbers of English, and the English language is spoken in nearly all the towns, but the people of the rural districts adhere to the Welsh. (See Wales, Language and Literature of.) There is a small colony of Flemings in the district of Gower in the S. W. part of Glamorganshire, who settled there in the time of Henry I., and who still maintain their isolated condition, speaking the Flemish language, and rarely intermarrying with the Welsh. The Welsh are a brave, generous people, but irascible and impulsive, superstitious, and somewhat fanatical. They adhere with great tenacity to their national customs and traditions, and take much pride in their antiquity. A large part of the population are engaged in pastoral or agricultural pursuits, and the production of butter, cheese, wool, mutton, and grain is very large. Mines and quarries occupy considerable numbers. The most important manufactures are those of iron in Glamorganshire, and those of flannel throughout the principality. The direct foreign commerce is not large, as its productions are to a considerable extent transported by railways, steamers, and canals to English ports. Cardiff, Swansea, Caermarthen, Pembroke, Milford, Cardigan, Holyhead, Beaumaris, Caernarvon, and Flint are ports of considerable importance. Great efforts have been made for a few years past to establish a direct weekly steam communication between Milford Haven and some American port, but thus far they have not been successful. Two lines of railway traverse Wales: the Gloucester and Haverford West, passing through the southern tier of counties, and communicating by a branch with the great manufacturing town of Merthyr Tydvil; and the Chester and Holyhead, following the northern shore from Chester, crossing the Menai strait by the Britannia tubular bridge, and terminating at the port of Holyhead on Holyhead island, the extreme N. W. point of Wales. Both lines connect by other railways with London. There are two canals partly in Wales: the Montgomery canal, 27 m. in length, extending from Newtown in Montgomeryshire to its junction with the Ellesmere canal in Shropshire; and the Ellesmere and Chester canal, commencing in Denbighshire, and passing through Flintshire, Shropshire, and Cheshire to join the Mersey. The two connect the Severn and Mersey. The coach roads or turnpikes, especially the great highway from Shrewsbury to Holyhead, are excellent, but the roads in the principality generally are much inferior to those in England.—Education is advancing, but is still far below the standard of England or Scotland. There are 4 collegiate institutions: St. David's college, Lampeter, with 7 instructors; the Presbyterian college at Caermarthen; Brecon Independent college; and Trevecca college at Brecon. The people are almost entirely Protestants, and a majority of them dissenters. There are 4 episcopal sees in the principality, St. David's, Bangor, Llandaff, and St. Asaph's. Among the dissenting denominations, the Calvinistic Methodists, Baptists, and Presbyterians are most numerous. The Mormons have made a large number of converts in Wales.—The Kymry, a Celtic tribe who had emigrated from the continent before the historic period, were in possession of nearly the whole of S. Britain when the Romans first visited the country, having driven their ancient enemies the Gael into Scotland, Ireland, the Hebrides, and the Isle of Man. They were continually harassed but never wholly conquered by the Romans, who succeeded in driving them into the country W. of the Severn, and established some camps in their territory. The Anglo-Saxons found them formidable enemies, but could never dislodge them from their mountain fastnesses, though they succeeded in wresting from them the present counties of Hereford and Monmouth. Toward the end of the 8th century Offa, king of Mercia, having expelled the Welsh from the border territory, made an artificial boundary from the mouth of the Dee to the Wye, at the point where it enters Wales. Traces of this boundary, known as Clawdd Offa or Offa's dike, still remain. In the 9th century Roderic, king of Wales, divided his territory among his three sons, giving the divisions the names of Gwynedd (North Wales), Dyved (South Wales), and Powys, which comprised portions of Montgomeryshire, Shropshire, and Radnorshire. In the early part of the 10th century these divisions were united under one king, Howel, surnamed Da, "the Good." The country was afterward divided into two principalities, North and South Wales. During the 10th century Athelstan, king of England, had obtained a nominal supremacy over Wales, and exacted an annual tribute from the inhabitants. On the accession of William the Conqueror this tribute was refused by the people, and he invaded the country with a considerable army, reduced them to submission, and compelled the princes to swear allegiance as his vassals. From this period the English kings laid claim to Wales as their dominion, but it proved an unprofitable one for some centuries. The Welsh constantly united with the disaffected barons in their opposition to the kings, and devastated the English border. William and his son bestowed considerable tracts of land in Wales upon their Norman followers, and Henry I. introduced a colony of Flemings to whom he gave lands in Pembroke and Glamorganshire. North Wales, amid all these troubles affecting the other portions of the principality, maintained its independence. In 1237 a civil war commenced between the prince of North Wales and his son Gryffyth, in which the former invited Henry III. of England to aid him in maintaining his authority; the assistance was rendered on condition of his becoming a vassal of the English crown. He consented, and his son and successor adhered to the compact; but in the reign of Edward I. the son of Gryffyth became prince, and declined to do homage without hostages for his safe conduct, and demanded the release of his consort, who was held a prisoner by Edward. This led to a war, and after a long siege the prince was obliged to submit to the English king. In a subsequent insurrection he was slain, and the shrewd Edward, having obtained the assent of the Welsh people to the appointment of a prince who was a native of their own country, presented to them his infant son, afterward Edward II., who was born in Caernarvon. Since that period the title of prince of Wales has generally been bestowed upon the eldest son of the reigning sovereign of England. Insurrections against the English government occurred in 1295 and subsequently, but were promptly suppressed. The latest and most important of the efforts made by the Welsh to regain their independence took place in the beginning of the 15th century under Owen Glendower or Glyndwr. (See GLENDOWER, OWEN.) By gradual changes during the reigns of Edward I. and his successors, the immunities and privileges of the Welsh people were assimilated to those of England; but this work was not completed till the reign of Henry VIII. By the statute 27 Henry VIII. c. 26, the complete identity of Wales with England in nearly all its provisions of law and citizenship was secured. By statutes passed in the reigns of George IV. and William IV. it has no jurisdiction in legal matters distinct from England. It is divided into 2 circuits, each having a single judge. It has 29 members of the house of commons, 13 of whom are from boroughs, and several English boroughs are partly made up from Welsh constituencies.

WALES, LANGUAGE AND LITERATURE OF. The Welsh language (*Cymraeg*, speech of the Cymri) is a branch of the Celtic family, and most nearly related to the Breizad or Breton. (See BRETON LANGUAGE.) Its alphabet consists of 13 simple and 7 double consonants and 7 vowels, with numerous diphthongs and triphthongs. The letter *c* always has the sound of *k; ch* is sounded gutturally, as in the Scottish word loch; *dd* is equivalent to *th* in English; *f* has the sound of the English *v*, *ff* of the English *f*, *ll* a peculiar sound similar to that of the French *ll mouillé*, *u* and *y* that of the Italian *i* or English *ee*, and *w* of *oo* in fool. The accent is always on the ultimate or penultimate syllable. Initial consonants are changed by declension and by the effect of preceding words; *e. g.: tâd*, a father; *ei dâd*, his father; *ei thâd*, her father; *vy nhâd*, my father. Thus *p* is changed into *b*, *mh*, and *ph ; t* into *d*, *nh*, and *th ; b* into *f* and *m ; d* into *dd* and *n*, &c. There is one article, which is not declined, but varies according to the initial letter of the following word. Substantives are declined by prepositions, by terminations, and by changes in their radical vowels; *e. g.: perth*, bush, plural *perthi; bwa*, bow, plur. *bwaau; tyrfa*, throng, troop, plur. *tyrfaoedd; march*, horse, plur. *meirch; ffordd*, road, plur. *ffyrdd; alarch*, swan, plur. *elyrch; mab*, son, plur. *meibion; nant*, brook, plur. *nentydd; maen*, stone, plur. *meini*. There are but two genders, masculine and feminine. Adjectives are formed from substantives, and verbs by means of the terminations *aid*, *gar*, *ig*, *in*, *lyd*, *og*, and *us*. The comparative is formed by the ending *ach*, the superlative by *af; e. g.: du*, black; *duach*, blacker; *duaf*, blackest. The feminine adjective is formed from the masculine by softening the initial letter, and also by changing the radical vowel. The verb has no present tense, to express which the future is used, or the substantive verb *wyv* (I am) with the infinitive. There is, however, an imperfect, perfect, pluperfect, and a future tense, which are formed, both in the optative and indicative moods, by endings and changes of vowels without auxiliary verbs; *e. g.: carwn*, I loved; *cerais*, I have loved; *caraswn*, I had loved; *caraf*, I shall love. Each tense has three persons both in the singular and plural; *e. g.: carwn*, *carit*, *carai*, *carem*, *carech*, *carent*. The passive voice is wanting, and is expressed by a peculiar circumlocution. There are several irregular verbs beside *wyv*. The adjective is usually placed after the substantive, but is often placed before. The numerals are: *un*, *dau* or *dwy*, *tri* or *tair*, *pedwar* or *pedair*, *pump*, *chwech*, *saith*, *wyth*, *naw*, *deg*. The personal pronouns are: *mi*, I; *ti*, thou; *ev*, he; *hi*, she; *ni*, we; *chwi*, you; *hwy* or *hwynt*, they. "The language," says Ferdinand Walther, "has great power, simplicity, and precision. It is very rich especially in roots, and has a remarkable capacity to express an entire abstraction in a single word."—The literature of the Cymri has laid claim to a very ancient origin, but modern criticism shows that even the earliest Welsh writings are subsequent to the Christian era. But it is certain that Welsh poetry was cultivated by professional bards at a remote period. (See BARD.) Gwyddon Ganhebon, of mythical celebrity, was the inventor of vocal song. The first eminent bard of whose period of existence we have a distinct record was Myrddin, the bard of Prince Emrys, the first Merlin of romance, who flourished about 450. Aneurin, identified by some with the Gildas of ecclesiastical history, Taliesin, prince of bards, Llewarch Hen, and Myrddin Wyllt or Merlin the Wild, belong to the 5th and 6th centuries; of them all numerous poems remain. The most gifted among more modern bards was perhaps Dafydd ap Gwilym (1293–1356), sometimes called the Ovid of Wales, the poet of love and nature. A volume of translations from his writings has been published in London (1834). Huw Morris (1622–1709) wrote songs, carols, and elegies, and sometimes violent political satires. The last remarkable poet of Wales, Goronwy Owen (1722–1780), died poor in New Brunswick, and his productions, including the *Cwydd y Farn* ("Day of Judgment"), regarded as the finest work of genius in the language, were first printed in 1819. The earliest Welsh prose literature is the triads, said to be of druidic origin, a sort of maxims in triplets, each setting forth a historical event or a moral principle. Next is the "Chronicle of the Kings of the Isle of Britain," supposed to have been written by Tysilio in the 7th century, and said to be the original of the chronicle of Geoffrey of Monmouth. It was continued to the year 1152 by Caradwg of Llancarvan, whose work is also in existence. The "Code of Howel Da," of the 12th century, is also an important literary monument, as is the "Biography of Gruffydd ap Cynan," of the 15th century. The "Mabinogion, or Juvenile Diversions," made accessible to English readers by the translations of Owen Pugh and Lady Charlotte Guest, is a collection of Cymric legends and fairy stories of unknown antiquity, but committed to writing in the 14th century. "The Sleeping Bard," written about 1700 by Elis Wyn, a moral and religious allegory, divided into the "Vision of the World," "Vision of Death," and "Vision of Hell," is a work of great originality and power; it has been translated into English by George Borrow (London, 1860). The first translation of the New Testament into Welsh was made by William Salesbury (1567), and the first translation of the whole Bible was completed by William Morgan and published in 1588.—Considerable bodies of Welsh emigrants have brought their native language to the United States, and there are communities in which it is the prevailing tongue. Welsh periodicals, newspapers, and religious tracts and books are also published in the United States for the use of citizens of Welsh origin. —A convenient Welsh grammar for students is that of William Spurrell (London, 1848; 2d ed., 1853), with a small vocabulary; and perhaps the most useful dictionary is that of John Walter (London, 1794; 3d ed., 1828).

WALEWSKI, Florian Alexandre Joseph Colonna, count, a French statesman, born in Walewice, Poland, May 4, 1810. He is reputed to be the natural son of the emperor Napoleon I. by a Polish lady. He first devoted his exertions to the cause of Poland, and at the age of 19 went to London to interest some prominent statesmen in its favor. After the revolution of July, 1830, he entered the French army, and was promoted to a captaincy, but soon resigned his commission. He now became a man of society, a publicist, and a dramatic author. He was one of the founders and editors of the *Messager* newspaper, published several pamphlets, among which were *Un mot sur la question d'Afrique* (1837) and *L'alliance Anglaise* (1838), and in 1840 produced a 5-act comedy, *L'école du monde, ou la coquette sans le savoir*, which had but little success. In the latter year he was sent on a diplomatic mission to Egypt by M. Thiers, received several appointments of the same kind under the Guizot ministry, and was in Buenos Ayres on the breaking out of the revolution of 1848. On his return home, he was favorably received by President Louis Napoleon, who appointed him minister plenipotentiary to Florence, and afterward to Naples. In 1854 he became ambassador to London, and on the resignation of Drouyn de Lhuys was placed at the head of the department of foreign affairs, in which post he was succeeded by M. Thouvenel, Jan. 4, 1860, when he was appointed minister of state in place of M. Fould. He was made grand officer of the legion of honor Dec. 3, 1852, and senator April 26, 1855.

WALHALLA, or Valhalla. See Mythology, vol. xii. p. 81, and Ratisbon.

WALKER. I. A N. W. co. of Ga., bordering on Tenn. and Ala., and drained by the Chattooga and Chickamauga rivers; area, 630 sq. m.; pop. in 1860, 10,082, of whom 1,535 were slaves. It is traversed by Taylor's ridge, and Pigeon, White Oak, and Lookout mountains. The soil along the streams is very rich. The productions in 1850 were 371,760 bushels of Indian corn, 51,969 of oats, 40,501 of sweet potatoes, 4,903 lbs. of rice, and 359 bales of cotton. It had an iron furnace, a newspaper office, 21 churches, and 984 pupils attending public schools. Bituminous coal, marble, limestone, gypsum, and lead abound, and there are several fine mineral springs. Crawfish spring, 12 m. N. of the capital, affords water sufficient to float a steamboat within a short distance from the cavern from which it issues. The county is intersected by the Atlantic and Western railroad. Capital, Lafayette. II. A N. W. co. of Ala., drained by Mulberry river and Lost creek, affluents of the Black Warrior, and by the Sipsy and Blackwater rivers; area, 828 sq. m.; pop. in 1860, 7,980, of whom 519 were slaves. The surface is hilly and the soil in the valleys very fertile. The productions in 1850 were 202,476 bushels of Indian corn, 27,806 of sweet potatoes, 711 lbs. of rice, and 592 bales of cotton. There were 5 grist mills, 4 saw mills, 4 collieries, 2 newspaper offices, 21 churches, and 45 pupils attending public schools. Bituminous coal is found, and there is an abundance of choice timber. Capital, Jasper. III. An E. co. of Texas, bounded N. E. by Trinity river; area, 1,000 sq. m.; pop. in 1860, 8,191, of whom 4,135 were slaves. The surface is level, and the soil a rich alluvium. The productions in 1850 were 102,475 bushels of Indian corn, 17,590 of sweet potatoes, 873 bales of cotton, and 6 hhds. of sugar. There were 2 newspaper offices, 1 church, and 181 pupils attending public schools. Capital, Huntsville.

WALKER, James, D.D., an American divine, late president of Harvard college, born in Burlington, Mass., then a part of Woburn, Aug. 16, 1794. He was graduated at Harvard college in 1814, was educated for the ministry at Cambridge, and in 1818 was ordained over the Unitarian church in Charlestown, of which he remained pastor for 21 years. During this period he was active not only in his pastoral duties, but in the cause of school and college education and of literature and philosophy. From the commencement of the year 1831 to March, 1839, he was editor of the "Christian Examiner," part of the time with the Rev. Dr. Greenwood and part of the time alone. He was also prominent as a public lecturer. In July, 1839, he resigned his pastoral charge, and in the following September entered on his duties as Alford professor of moral and intellectual philosophy at Cambridge. He was elected president of the college in Feb. 1853, and held the office till Feb. 1860, when bodily infirmity induced him to resign it. Since that time he has lived in comparative retirement at Cambridge, spending his leisure hours in the revision of his courses of "Lowell Lectures upon the Philosophy of Religion," and in preparing a memoir of his classmate and friend, the late Judge White of Salem. He has published a considerable number of sermons, addresses, and lectures, contributed largely to the "Christian Examiner," edited portions of Reid and Stewart for the use of college students, and published in 1861 a volume of sermons that he had preached in the chapel of Harvard college while a professor there.

WALKER, James Barr, an American clergyman and author, born in Philadelphia, July 29, 1805. After working for a time in a manufactory at Pittsburg, and for 4 years in a printing office, improving his evenings by hard study, he travelled on foot at the age of 20 from Pittsburg to New York, became a clerk in the office of M. M. Noah, and was afterward principal of an academy at New Durham, N. J. Returning to the West, he next studied law in Ravenna, Ohio, and in 1828 entered Western Reserve college, Hudson, from which he withdrew without graduating in 1831. He afterward published and edited successively three religious newspapers, at Hudson, O., at Cincinnati, and at Chicago, and in the two latter cities also engaged in the publication and sale of religious and other books. About 1839 he commenced the study of theology, and in 1841 was licensed to preach by the presbytery of Chicago. He has resided for many years in Mansfield, O., where he has established a private asylum for orphans; he has been for some time past the acting pastor of a Presbyterian church in Sandusky, and is lecturer on "the harmony between science and revealed religion" at Oberlin college and Chicago (Presbyterian) theological seminary. Mr. Walker's first work, "Philosophy of the Plan of Salvation," was published anonymously, but attracted much attention both in America and Europe. In England 4 editions of it have been published, and it has been translated into most of the languages of Europe. He has also published "God Revealed in Creation and in Christ" (Boston, 1858); "Philosophy of Scepticism," now withdrawn from the market for revision; "Philosophy of the Divine Operation in Human Redemption" (London, 1862); and "Poems" (London, 1862).

WALKER, John, an English lexicographer, born in Colney-Hatch, Middlesex, March 18, 1732, died in London, Aug. 1, 1807. He was at first engaged in trade, and afterward became an actor; but meeting with little success, in 1767 he joined another in establishing a school at Kensington Gravel-pits. He quitted that occupation two years afterward, and began to teach elocution, in which he soon gained a wide celebrity, not only in London, but in Oxford and the cities of Scotland and Ireland which he visited. In 1772 he published "A General Idea of a Pronouncing Dictionary of the English Language," which was followed in 1775 by a rhyming dictionary, first published under the title of "A Dictionary of the English Language, answering at once the purposes of Rhyming, Spelling, and Pronouncing." In 1781 his "Elements of Elocution" appeared, and in 1783 a pamphlet entitled "Hints for Improvement in the Art of Reading," most of which was incorporated in the "Rhetorical Grammar," published in 1785. In 1787 he wrote a small treatise under the title of "The Melody of Speaking delineated, or Elocution taught like Music by Visible Signs;" and in 1791 appeared his chief work, the "Critical Pronouncing Dictionary and Expositor of the English Language," which for many years was the standard lexicon of the language. In 1805 appeared his "Outlines of English Grammar," the last of his published works. Mr. Walker was brought up as a Presbyterian, but died in the Roman Catholic faith.

WALKER, Robert, an English painter who flourished during the commonwealth. He was a contemporary of Vandyke, on whose style his own was founded, and was employed to paint likenesses of Cromwell and the principal members of the republican party. Of his several portraits of Cromwell, that in the Pitti palace, and that in the British museum representing the protector in armor holding a truncheon, are executed in a masterly style.

WALKER, Robert James, an American statesman, born in Northumberland, Penn., in 1801. He was graduated at the university of Pennsylvania in 1819, commenced the practice of law in Pittsburg in 1821, and became prominent there by putting the name of Gen. Jackson in nomination for the presidency before it had been suggested in any other quarter. In 1826 he removed to Natchez, Miss., where he soon acquired an extensive and lucrative practice. In 1835 he defeated the Hon. George Poindexter as candidate for the United States senate, and had scarcely taken his seat in that body when, on a question connected with the public lands, he came in collision with Mr. Clay, making a spirited reply to that statesman, by which he acquired great popularity in the western states. He was consulted by President Jackson in relation to the prospective acquisition of Texas and California. A secret agent was despatched to the former country to ascertain its resources and the temper of its inhabitants, and the great party movement was inaugurated which resulted in the acquisition of those territories. Mr. Walker supported the leading measures of President Van Buren's administration, especially the divorce of the government from the banks. When Mr. Tyler became president, Mr. Walker, it was ascertained, exerted great influence over the administration, and it was through his counsel mainly that the former was induced to veto the bank bill that had been framed under the supervision of Mr. Clay. It was under the same influence that President Tyler adopted those unexpected and vigorous steps, near the close of his administration, which resulted in the incorporation of Texas into the American Union. He had been the personal and political friend of Mr. Van Buren; but when that statesman, then about to receive the democratic nomination for the presidency, announced his opposition to the annexation of Texas, Mr. Walker took the initial measure to supersede him, and his movement in the Baltimore convention secured the nomination of James K. Polk. A letter of Mr. Walker's on the Texas question had great influence in determining the result of the election; and when Mr. Polk came into office (1845) he received the appointment of secretary of the treasury. His celebrated report in favor of free trade was reprinted by order of the British house of commons. During the war with Mexico he urged the most vigorous measures, and demonstrated the ability of the government, under a proper administration of the finances, to support its credit without the agency or intervention of banks. At the close of Mr. Polk's term of office Mr. Walker resumed the practice of law, chiefly in the supreme court of the United

States. During the administration of President Buchanan he was appointed governor of Kansas at a period of great difficulty, but resigned in consequence of disagreement with the president, and has since taken no part in public affairs. In April, 1861, he made an address at a mass meeting in Union square, New York, strongly sustaining the government in the civil war then commencing.

WALKER, Sears Cook, an American mathematician and astronomer, born in Wilmington, Middlesex co., Mass., March 28, 1805, died in Cincinnati, Jan. 30, 1853. He was graduated at Harvard college in 1824, taught a school near Boston for two years, and in 1827 removed to Philadelphia, where also he engaged in teaching. He took an active part in the various scientific societies, and gave all his energies to the furtherance of scientific interests and pursuits. His parallactic tables, first prepared in 1834, for the latitude of Philadelphia, reduced the time needed for computing the phases of an occultation to less than half an hour. In the "Memoirs of the Philosophical Society" (new series, vol. i.) he published a long series of observations of occultations which he had made and collected. In 1836 he became actuary of a life insurance company. In 1837 he was invited to prepare a plan for the organization of an observatory in connection with the Philadelphia high school, which was the first observatory in America deserving the name, if we except the one at Hudson, Ohio, which was built about the same time, and somewhat earlier provided with instruments. From the equipment of this observatory in 1840 until the year before his death, he published in the "Proceedings of the American Philosophical Society" and the "American Journal of Science" frequent and copious observations and investigations made by himself alone, or in conjunction with his half brother, Prof. Kendall, then connected with the Philadelphia high school. In 1841 he published a valuable memoir on the periodical meteors of August and November. In 1845 Mr. Bancroft, then secretary of the navy, invited him to take part in the Washington observatory, where on Feb. 2, 1847, 4 months after the detection of the planet Neptune, he made the discovery that a star observed by Lalande in May, 1795, must in fact have been this planet. The prediction consequently made, that the recorded star would not be found in the heavens, was confirmed by Prof. Hubbard on the first clear evening, and the determination of the orbit was thus rendered easy and accurate by the acquisition of an observation made 52 years previously. The same discovery was made independently in Europe a few weeks later by an actual examination of the heavens through 270 square degrees, and confirmed by an examination of the original MSS. of Lalande. By the subsequent alternating computations of Peirce and Walker, the former investigating the perturbations, and the latter the orbit, the theory of Neptune was at once placed on a footing comparable with that of the other large planets. Leaving the observatory soon afterward, he was invited by Prof. Bache to take charge of the longitude computations of the U. S. coast survey, an office in which he continued until his last illness. In the autumn of 1845, previous to his removal from Philadelphia, he had been invited by Prof. Bache to take immediate charge of arrangements for determining differences of longitude by telegraph; and by the joint labors of these astronomers the method of telegraphic longitude determinations had been developed and successfully carried out as early as 1849, with greater precision than was attained in Europe 10 years later. The introduction of the chronographic method of recording observations belongs to Walker and Bache. The prosecution of the telegraphic method of longitude soon led Mr. Walker to the discovery that the time required for the transmission of the galvanic signal was measurable, and the velocity by no means as high as had been supposed. In Aug. 1851, he suffered a slight stroke of paralysis. This, as he refused to interrupt his studies, was soon followed by symptoms of mental disorder, which continued until shortly before his death.

WALKER, William, an American adventurer, born in Nashville, Tenn., May 8, 1824, executed at Truxillo, Honduras, Sept. 12, 1860. The son of Scottish and Kentucky parents, he studied medicine, which profession he never practised, although to complete his education he went to Europe, and is said to have studied at Paris, and afterward made the tour of Italy and Germany. Returning to Nashville, where he resolved upon the law as his favorite profession, and subsequently removing to New Orleans, he became attached to the editorial staff of the "Crescent" newspaper. In 1850 he went to California, where he was one of the editors of the San Francisco "Herald," and afterward appeared at Marysville as a lawyer. In July, 1853, he organized an expedition in San Francisco for the conquest of Sonora. His first effort to set sail was defeated by the authorities; but on Oct. 15, 1853, he made good his exit from the port, and landed with his companions at La Paz in Lower California, proclaiming the independence of the peninsula, and declaring himself to be its president; then, after capturing without difficulty two or three towns, he issued a new proclamation annexing the state of Sonora to his territories. A few months later he received from San Francisco a reënforcement under Col. Watkins, and on March 20, 1854, with 100 men set out overland for Sonora. Their provisions being exhausted, the party was dissolved from destitution, and Walker finally surrendered himself to the U. S. officials in San Diego. He was tried at San Francisco, May 15, 1854, for violating the neutrality laws, and acquitted. Intestine troubles having become virulent in Nicaragua, Walker was induced by some American speculators to go to that country with the ostensible purpose of lending his sword to the support of the democratic party; and on June 11, 1855, at the head of 62 followers, he landed at Realejo. Joined by 100 natives, he fought a battle at Rivas on June 29 against 480 of the enemy, in which, though abandoned by his native soldiers, he maintained himself till he had left 180 of his opponents dead and wounded on the field, while his own loss was 10 only. A new force of 120 natives having joined him, in a second battle at Virgin bay he put 540 of the enemy to flight. On Oct. 15 he took possession of the city of Granada, and on Oct. 25 he concluded a treaty with Gen. Corral, the leader of the antagonistic party, by which a new president was agreed upon, and Corral resigned his command, while Walker, who had refused to be president, was appointed generalissimo of the republic, and undertook to retire to Leon with his forces, which were not to be augmented beyond 100 men. This, however, did not prevent the constant arrival of recruits from both the Atlantic and Pacific coasts of the United States; and finally by March 1, 1856, he had 1,200 men. Meanwhile Corral was arrested, tried for treason by a court martial over which Walker himself presided, and shot Nov. 8, 1855. Hostilities with Costa Rica having broken out, in the first contest near Guanacaste, March 20, 1856, Walker's forces were defeated; in the second, at Rivas, April 11, they gained an advantage, which led to the temporary cessation of the war against him. Being now apparently secure in the possession of power, he began the destruction of his fortunes by confiscating the property and revoking the charter of the Vanderbilt steamship company, by which the interoceanic transit route through Nicaragua was managed. On June 25 he caused himself to be elected president, and on Sept. 25 he revoked by a decree the prohibition of slavery which had been in force in the country for 32 years. A powerful domestic insurrection was now seconded by the efforts of the other Central American states, while agents of the Vanderbilt company rendered great assistance to the allied enterprise. Finally, on May 1, 1857, after several battles, Walker, incapable of longer resistance, surrendered himself with 16 of his officers into the hands of Commander C. H. Davis of the U. S. sloop of war St. Mary's, by whom he was taken to Panama, whence he came to the United States, to meditate novel schemes of adventure. To frustrate a new expedition, the authorities at New Orleans arrested Walker, and obliged him to give bonds of $2,000 to keep the peace; but on Nov. 11 he escaped from that city with the steamer Fashion, bound ostensibly for Mobile, and landed, Nov. 25, at Punta Arenas, Nicaragua. On Dec. 8 he was compelled by Commodore Paulding, U. S. N., to surrender with 132 of his followers, and arrived in New York as a prisoner, Dec. 28. President Buchanan, who had denounced this expedition in his annual message on Dec. 8, made the arrest of Walker by Commodore Paulding the subject of a special message on Jan. 7, 1858, in which he condemned the commodore for landing a force on the soil of a foreign country, and said that the government had declined to consider Walker a prisoner until he should be regularly arrested by judicial authority. At the same time the president insisted on the necessity of preventing all such expeditions as those with which he had been connected. The great "fillibuster," however, found considerable popular sympathy in various parts of the United States, especially in the South. In Oct. 1858, President Buchanan issued a proclamation warning all persons against engaging in a new expedition against Nicaragua, and on Oct. 7 Walker and his companions were arrested on board a steamer at the mouth of the Mississippi, having left Mobile without a clearance. The parties were all acquitted by the U. S. court at New Orleans, and in June, 1860, Walker again left that city, landing on the island of Ruatan, June 25, and at Truxillo, June 27, where 3 of his men were wounded in taking the place, while the enemy lost 12 killed and 18 wounded. In a proclamation to the people of Honduras, he informed them that he was making war not on them, but on their government. On Aug. 23 the president of Honduras with 700 men approached Truxillo, and the commander of an English man-of-war in the harbor ordered Walker to leave the town. With 80 men he marched southward along the coast, was captured Sept. 3, brought back to Truxillo, condemned by a court martial, and shot. He died bravely, professing himself a Roman Catholic. He was rather below the middle size, slender, with light hair, keen gray eyes, high cheek bones, slow speech, and an appearance of cold-blooded determination rather than adventurous enthusiasm.

WALKING-LEAVES AND WALKING-STICKS, the popular names of several insects of the orthopterous order, found chiefly in warm climates, derived from their striking resemblance to these parts of plants. In the genus *phyllium* (Illig.) the body and legs are flattened and membranous, and the wings in their shape, branching veins, and color, as they cover the abdomen, appear like two leaves, according to the species green and fresh as in spring, brown and withered as in winter, or red and yellow as in autumn; the legs and thighs also have leaf-like expansions, and the eggs have the appearance of seeds. The *P. siccifolium* (Ill.), the dry walking-leaf, is 3 inches long, of a pale yellowish green color; this and other species are raised by the natives of the East Indian and Pacific islands as objects of trade for curiosity seekers; some of the species are destructive to the cocoanut palm. Others have no wings, but a long, slender, and cylindrical body, like a small stick with the bark on, even the knobs and excrescences of the wood being imitated, the delicate legs looking exactly like little branching twigs, and the long and slender antennæ like the minuter spray. Such are the walking-sticks of the genus *spectrum* (Stoll) or *phasma* (Fabr.), very large species of which are found in the East Indies, Australia, and South America. The *P. gigas* (Fabr.), of the East Indies, is 7 or 8 inches long, green, but with large reddish gray, reticulated, and brown-spotted wings, and spinous legs. The common walking-stick of the northern and western states (*S. femoratum*, Say) has no wings; it is between 3 and 4 inches long, and ⅛ to ¼ wide; the male is greenish brown, and the female ashy and stouter; the *S. bivittatum* (Say), a southern species, very common on the palmetto, is blackish brown, with 2 yellowish dorsal stripes. There are several species of *bacteria* (Latr.), called walking-sticks, in South America.—These insects are inactive, remaining motionless for a long time, and moving very slowly over the leaves on which they feed; they are not so numerous as to be considered injurious to vegetation; they owe their safety from birds and other enemies to the similarity of their color to that of the objects on which they live. The stories of the transformation of horse hairs into worms in water, of leaves into singular-shaped and moving animals, and of sticks acquiring legs and going from place to place, said to have been founded on actual observation, and for a long time believed, have a semblance of truth for their foundation which may well excuse the credulity of those ignorant of the hair-like *gordius*, and of the genera *phyllium* and *phasma*.

WALL FLOWER, a perennial garden plant belonging to the natural order *cruciferæ*, and prized for the delightful fragrance of its blossoms as well as for the great variety of colors which they assume. There are several species which occur in southern Europe and northern Africa; but the most familiar is the *cheiranthus cheiri* (Linn.; Arab. *kheyry*), a plant with red, sweet-scented flowers. The genus is distinguishable by the connivent sepals, the lateral ones swollen at base, the pod (silique) linear, compressed, 4-angled; the valves strongly nerved longitudinally; the stigma 2-lobed; the seeds oval-compressed and arranged in a single row. The foliage of the wall flower consists of sharply lanceolate, very entire, smooth leaves, sometimes covered with close, bristly, appressed hairs, the lower ones sparsely serrate; its flowers are borne in racemose spikes, and are either yellow, brown, rusty, purple, pinkish rosy, or blood-colored, frequently very intense and rich in the tints. Its trivial name is derived from the natural habit of the plant to grow on ruined walls; but it flourishes equally well in the garden. By long cultivation about a dozen distinct varieties have been produced, of which several with multiplex-petalled flowers are known, perpetuated by cuttings, which strike root easily under a bell glass. The seeds may be sown either in spring or autumn, the plants blossoming better in the second year. Some protection is necessary in winter to guard against excessive moisture at the roots, by which loss is incurred. A slightly acrid property is peculiar to the wall flower, and in Europe the plant has been recommended for sowing in sheep pastures as a preventive of the rot.

WALL PAPER, or Paper Hangings, called by the French *papier teint*, ornamental colored paper affixed to the walls of houses as a substitute for the ancient tapestry hangings. The Chinese appear to have employed paper for this use from time immemorial, and the English claim to have first introduced the practice into Europe. On the other hand, the French assert that printed paper hangings were first made at Rouen as early as 1620 or 1630 by one François, and that the art was perfected in the latter part of the last century by Reveillon in Paris. It has certainly prospered more in France than in any other country; and so much taste and skill has there been developed in the manufacture, that the French papers have been sought for in preference to all others. In Paris are numerous factories of paper hangings, employing more than 3,000 workmen; in Lyons are 3 establishments, and one each at Mulhouse, Strasbourg, and Metz. Others are found in Belgium, Germany, Holland, England, and Russia. The manufacture is successfully carried on in various places in the United States, as in New York city, where are 3 factories; Rahway, N. J.; Philadelphia, where 6 factories are in operation, producing annually paper hangings to the value of $800,000; and also in several establishments in New England. The production of these works already supplies a large portion of the home consumption both of the common and finer sorts. Paper hangings however still make the largest item in the importations of paper. Many of them come from the south of France.—Paper hangings are prepared by several different methods. At first, it is said, the ornamental designs were laid upon the sheets of paper by stencilling, which was applying the water colors with a brush through a plate or pasteboard in which the pattern was cut out, and which was laid against the paper. To this mode succeeded the printing by blocks in the manner described in Calico Printing. A ground color mixed with size is first laid over the whole paper, and upon this the designs are printed by blocks, each color in succession with its own block. For complicated patterns an extraordinary number of blocks are required. For printing a single pattern in the great exhibition of 1851, representing a chase in a forest, no fewer than 12,000 blocks were used. Zuber of Rixheim, near Mulhouse, invented several ingenious methods of applying the colors. Longitudinal stripes were produced by passing the paper under a box divided into compartments, each containing its own color, which was allowed to ooze out just sufficiently to color the paper. The elegant "satin papers" are prepared by mixing with the coloring matter some sulphate of lime or of alumina, and finishing by the brush. Velvet or flock paper, distinguished by its appearance resembling velvet plush, is prepared by fixing, after printing the colors, some finely ground fibres of wool of suitable colors to its surface by means of glue or white lead and oil. The application is supposed to have been made originally upon canvas, before paper of suitable character was to be had for the purpose. Gilded and silvered papers are prepared after the design has been printed in some adhesive colors by attaching bits of gold or silver leaf, or brushing over the pattern some bronze powder with a hare's foot. Many of the colors used upon paper hangings are prepared from mineral substances, some of which are of highly poisonous character. This is especially the case with the rich greens of the flock papers, which are chiefly what is called Schweinfurt green, a very dangerous compound of arsenic and copper. (See GREEN.) Costly and elegant paper hangings of this character are now in use, the noxious influence of which seriously affects the workmen who put them up, and occasionally so vitiates the atmosphere of the apartments as to impair the health of the inmates of the house. All but the finest qualities of paper hangings are now printed from cylinders by steam power, finishing from 1,000 to 1,500 pieces a day.

WALLA WALLA, a S. co. of Washington territory, bordering on Oregon, and drained by the Columbia river and its tributaries, Lewis's fork, Yakima and Walla Walla rivers, and other streams; area, about 7,500 sq. m.; pop. in 1860, 1,827. The surface is diversified, and the soil along the streams is highly productive. Mountain ranges traverse the N. E., the S. W., and the S. E. portions of the county, and the great plain of the Columbia river occupies the central part. Capital, Walla Walla.

WALLACE, HORACE BINNEY, an American author, born in Philadelphia, Feb. 26, 1817, died by his own hand in Paris, Dec. 16, 1852. At 15 years of age he entered the university of Pennsylvania, but remained only two years, when he was transferred to the college at Princeton, N. J., where he was graduated in 1835. He then devoted some time to chemistry, medicine, and last to the law, which he chose as a profession, though he never practised it. In connection with Judge Hare, he edited, with notes, "American Leading Cases," "Smith's Leading Cases," and "White and Tudor's Leading Cases in Equity," which have passed through frequent and very large editions. In 1850 Mr. Wallace went abroad, where he remained about a year, visiting the most interesting parts of Europe. On his return he applied himself again to study; but his health failing, he went to Paris for medical relief, and in an access of cerebral disease committed suicide. He left a great variety of sketches, reviews, and philosophical papers, two volumes of which have been collected and published, one entitled "Art and Scenery in Europe," the other "Literary Criticisms and other Papers." Few Americans have left a more lively impress of genius upon the eminent men of the old world. "In him," said Auguste Comte, "heart, intellect, and character united in so rare a combination and harmony, that he would have aided powerfully in advancing the difficult transition through which the 19th century has to pass. Free from all affectation, his culture, both æsthetical and scientific, was in perfect harmony with his fine organization. I do not exaggerate in ranking him as the equal of the greatest American statesmen."

WALLACE, SIR WILLIAM, a Scottish patriot and soldier, born about 1270, executed at Smithfield, Aug. 23, 1305. The rhymers of the 14th century supply the most that is known of his early history. He was of Anglo-Norman descent, the younger son of the knight of Ellerslie. Before he was 21 years of age, and while pursuing his studies at the high school in Dundee, an incident occurred which brought him at once before the eyes of his countrymen, who were at the time, by reason of internal dissensions and the deposition of their sovereign, Baliol, subject to the arbitrary dominance of Edward I. of England. Resenting an insult offered him by the son of the English governor of Dundee castle, he stabbed the lad with his dagger; and the wound proving fatal, Wallace was obliged to flee for his life. For some time afterward, probably for 5 years, he seems to have led the life of an outlaw in the fastnesses of the southern highlands. His accomplishments, personal prowess, and bravery during this period, drew around him a considerable number of followers, especially of that portion of the nobility who had remained true to the cause of national independence. His first feat as a national leader, after he had been joined by such men of note as the steward of Scotland, Sir William Douglas, Sir John Graham, and Murray of Bothwell, was a carefully planned attack upon the English justiciary while holding his court at Scone, which resulted in the taking of many prisoners and the killing of many more. While Wallace himself directed this expedition, Douglas and others of his adherents surprised and compelled the surrender of the English garrisons in the castles of Durisdeer and Sanquhar. The spirit of resistance which these daring exploits aroused showed the English sovereign the necessity for immediate action. He therefore collected 40,000 men with a small cavalry troop in the northern counties of England, and placing these under the command of Sir Henry Percy and Sir Robert Clifford, he ordered the army at once into Scotland. The Scottish military force had assembled at Lochmaben, and on the approach of the English a night attack was made upon them by Wallace and his troops; but the latter were ultimately obliged to retire, falling back toward Irvine in Ayrshire. To this point they were pursued, and Wallace, having his force in good position, would have given battle again;

but dissensions arose among the chiefs in the Scottish army, and a treaty of capitulation was agreed upon at the instance of the bishop of Glasgow, Douglas, Bruce, and others. Wallace and Murray of Bothwell alone of the leaders protested, and retired into the northern counties, where they speedily recruited a powerful force, and surprised and captured the English garrisons at Aberdeen, Dunottar, Forfar, and Montrose. These events, including the fight at Lochmaben and the subsequent treaty at Irvine, took place in 1297; and Wallace had commenced the siege of Dundee, when he heard of the advance of a powerful English army toward the river Forth in the direction of Stirling, the very heart of the kingdom. To prevent the invading force from crossing the river was a point of paramount importance. He therefore abandoned the siege of Dundee, and, recruiting as he went, reached Stirling with 40,000 foot and 180 horse, in time to defend the pass there. The English numbered 50,000 foot and 1,000 horse; but when Surrey, the commander-in-chief, reached the bridge, and saw the force on the opposite bank of the river, he appears to have despaired of the result of an attack. Several titled deserters from the Scottish army, who were with Surrey, were deputed to persuade Wallace to capitulate, a free pardon being offered unconditionally in the name of the English king. The terms were rejected, and a large portion of Surrey's force were ordered at once to cross the river. The result was extremely disastrous to the English army. From their advantageous position Wallace's men drove them back with terrible fury, and pursued them to the south side of the river, and through the country to the border town of Berwick. King Edward's forces were almost completely cut to pieces, and Wallace, by general consent, in the absence of the lawful monarch, was declared governor and guardian of the kingdom of Scotland. Following on this was a severe famine, which suggested the raising of an army to invade the northern counties of England for the purpose of procuring supplies. Wallace laid waste the country from the borders to Newcastle, and returned with his spoils, to attempt an organization of the country committed to his care. Meanwhile King Edward had raised an army of 80,000 infantry and 7,000 horse. A portion of this force landed by sea on the N. E. coast, and suffered a partial reverse; but the main body advanced northward from the borders, and on July 22, 1298, came up with the Scottish forces near the town of Falkirk, where a decisive engagement was fought, in which the army of Wallace was defeated with a loss, according to various historians, of 15,000. For several years after this Wallace appears to have carried on a sort of guerilla warfare, and is said to have made one or more journeys to Paris with the view of securing French intervention. Large rewards were offered by King Edward for his arrest, and he was ultimately betrayed by a son of the earl of Monteith. He was taken in the neighborhood of Glasgow, and at once conveyed to London. The day after his arrival the form of a trial was gone through in Westminster hall; the prisoner, in derision of his pretensions to the throne of Scotland, being decorated with a crown of laurel. He was condemned to death, and the same day dragged at the tails of horses to the scaffold in Smithfield, and there beheaded; his body was quartered, according to the custom of the day, and sent to different parts of the kingdom.

WALLACE, William Ross, an American poet, born in Lexington, Ky., about 1819. He is the son of a Presbyterian clergyman, was educated at the Bloomington and South Hanover colleges in Indiana, and after his graduation studied law in his native place. He had already acquired some literary reputation, when about the age of 22 he went to New York, where, with the exception of a year and a half spent in Europe, he has since resided, engaged in literary avocations. In 1848 he published a poem entitled "Alban, the Pirate," and in 1851 a collection under the title of "Meditations in America, and other Poems." He is at present a frequent contributor to the journals. Mr. Wallace has ready for publication a long national poem entitled "Chants in America," a poem entitled "Pleasures of the Beautiful," and a collection of his minor poems.

WALLACE, William Vincent, an Irish composer, born in Waterford in 1815. He received his earliest musical instruction from his father, a military band master, and at the age of 15 could play with some degree of skill on every instrument of the orchestra, and had written numerous marches, fantasias, and similar compositions for military bands. As a performer on the pianoforte and violin he showed great excellence. At the age of 18, on account of failing health, he sailed for New South Wales, and for a long time was engaged in agricultural pursuits. He gave his first concert at Sydney with great success, and thenceforth travelled extensively over the southern hemisphere, deriving large emoluments in the Spanish American cities from his performances on the violin and the pianoforte. After a professional tour in the United States he returned to England, where his first opera, "Maritana," was produced with great success. He then entered upon a busy career as a composer, producing in rapid succession "Matilda of Hungary," "Lurlei," "The Maid of Zürich," "Gulnare," and "Olga," several of which were performed in Germany and elsewhere in continental Europe. In 1849 he was commissioned to write an opera for the grand opera of Paris, but had scarcely commenced the work when he became totally blind. For the purpose of recovering his eyesight he made a voyage to Rio Janeiro, whence in 1850 he repaired to the United States. Here he remained several years employed in compositions, after which he returned to England, where he now resides.

WALLACHIA, or WALACHIA (Wallachian, *Tzara Roumaneska;* Turkish, *Ak-Iflak*), one of the Danubian principalities, lying between lat. 43° 42′ and 45° 43′ N., and long. 22° 25′ and 28° 5′ E., bounded N. by Transylvania and Moldavia, E. and S. by Bulgaria, from which it is separated by the Danube, and W. by Servia and the Austrian military frontier, being also separated from the former by the Danube; area, 28,267 sq. m.; pop. 2,600,000, of whom about 2,000,000 are Wallachs or Roumans, and the remainder Jews, Greeks, Russians, Servians, Armenians, and gypsies. It is divided into 3 provinces, Upper, Lower, and Little Wallachia, and these are subdivided into 18 districts; capital, Bucharest; principal towns, Brahilov, Giurgewo, Fokshany, and Krajova. The principal river is the Danube, which forms ⅝ of the frontier; and the whole principality is drained by its tributaries, of which the principal are the Sereth, dividing it from Moldavia, the Buseo, Jalomitza, Arjish, the Teliorman, the Aluta, which divides Little from Upper Wallachia, and the Shyl. These are all navigable for barges, and might easily be made so for steamers. In the lower portion of the principality there are a number of marshy lakes, formed by branches of the Danube. In the north, the Carpathian mountains form the northern barrier between Wallachia and Transylvania, and spurs of this chain stretch toward the Danube with wide valleys between. Toward the Danube the country becomes flat and is subject to inundation. The mountains are palæozoic; the country lying in the basin of the Danube belongs to the tertiary series. The soil, except on the mountains, is of extraordinary fertility and well adapted to grain. The mountainous districts afford excellent pasturage for sheep, and the level lands yield a rich grass for cattle. The temperature is subject to great and sudden changes. There are properly but two seasons, a winter of 5 months, during which the ground is almost constantly covered with snow, and a summer of 7 months, intensely hot, and in the marshy regions unhealthy. The cold of winter is often as low as 14° F., and the heat of summer 96° or 97° F. The vegetable productions are wheat, barley, flax, hemp, rye, maize, peas, beans, tobacco, &c. The vine flourishes, and some of the wine produced is excellent. The French berry (*rhamnus infectorius*) grows abundantly, and is exported for the use of the dyer. Timber of excellent quality is found in the forests. The country if properly cultivated might become one of the granaries of Europe. Its mineral wealth is very great, but very little developed. There are mines of copper, mercury, gold, silver, iron, lead, rock salt, alum, and bitumen. Marble of good quality is found in the mountains. The wild animals are the wild boar, bear, badger, marten, wolf of great ferocity, fox, wild cat, several species of hare, beaver, squirrel, fallow deer, antelope, chamois, and wild ox. There are many varieties of singing birds, and on the Danube and its tributaries wading and aquatic birds; the bustard and partridge as well as other game birds are found in the mountains. There are serpents and lizards in the lowlands. Fish abound in the waters. Large numbers of cattle, horses, sheep, and goats are exported. —The Wallachs, who form the principal part of the population in both Wallachia and Moldavia, call themselves Roumans (Romuni or Rumuni). The name Wallach, which with some modification (*Wloch*, *Woloch*, *Vlach*, *Olasz*, *Oláh*, *Iflak*, *Wälsch*, &c.) is applied by the Slavi, Hungarians, Turks, and Germans, to designate all Romanic tribes, originally belonged to the ancient Vlachi, who at first were a Roman colony planted by Trajan in Thrace, and in the 12th century, in consequence of the oppression of the emperor Manuel, emigrated north of the Danube. The people in general are divided into 4 classes, viz.: the boyars or nobles, a privileged class, the clergy, the peasants, and the gypsies. The pursuits of agriculture and cattle and sheep rearing occupy the greater part of the people, and the skins of his sheep with the wool on furnish the peasant with his clothing. There are few manufactures. The roads are bad, and though steamers ply upon the Danube, yet they belong to a foreign power, and no effort is made to increase the navigation of the country. The number of vessels that cleared from Brahilov, the chief port of the principality, in 1858, was 1,291. The exports for 1856 were valued at $5,546,287, and the imports at $5,198,794. Of late years education has made considerable progress; there is a college at Bucharest, which, beside its undergraduate course, has a law department; there are 4 theological seminaries in the principality; a normal school in each circle or district, attended in all by about 4,000 pupils; and about 2,500 primary schools, with nearly 60,000 pupils. The prevalent religion is that of the Greek church. There is an archbishop at Bucharest, and 3 bishops in the 3 provinces.—The government is of the nature of a limited elective monarchy, under the suzerainty of the Porte, the *hospodar* or prince, who is now prince also of Moldavia, being elected for life by an assembly of deputies chosen by the boyars from their own order, and confirmed by the sultan, and the legislative power residing in an elective diet of 42 members chosen by the people to serve 5 years. The hospodar governs under a constitution. The judiciary consists of a supreme court of justice at Bucharest, two courts of appeal at Bucharest and Krajova, and a tribunal of the first instance in the chief town of each district. The present hospodar is Prince Alexander John I. (Col. A. J. Couza), elected by the assembly of Wallachia, Feb. 5, 1859. He is assisted by a cabinet of 6 ministers for each principality. The government revenues from all sources in 1857 were $2,735,724, and the expenditures $3,013,934. The national debt was about $1,000,000. The army consists of 6,126 regular troops, a frontier guard of about 7,400 men, and the national police or gendarmerie of about 4,700, making a total of 18,200 men.—Wallachia, which under the Romans belonged to Dacia, was during many centuries successively occupied by barbarous nations, the Goths, Huns, Avars, Bulgarians, Petchenegs, Uzes, Cumanians, and Mongols; but toward the close of the 13th century it became a separate state, subsequently often united with Moldavia, or conquered by the Hungarians. In 1393 Marcus I., hospodar of Wallachia, was defeated by the Turks, whom he had first sought as allies against the Hungarians, and reduced by the treaty of Nicopolis to vassalage to Bajazet, the Turkish sultan. To deliver himself from their repeated invasions, he made an alliance with his old enemy Sigismund, king of Hungary, and after defeating the Turks the two appealed to the European princes for aid. The appeal was heard, but the European leaders were defeated in 1396, and the treacherous Marcus went over to the Turks, only to form new alliances, by which he eventually defeated both the Turks and the Hungarians. For the next 400 years the history of Wallachia is simply a succession of struggles against the Turkish power whenever the country was in a condition to endure war, and of tributary vassalage when exhausted by protracted contests. Sometimes the Turks allowed the boyars to select their own hospodar, whom the sultan invested with authority; sometimes he appointed him himself. In 1807 the Russians invaded the principality, and again in 1809, holding possession of it till the peace of 1812, when it again became tributary to the sultan. The hospodar Karudza in 1818 withdrew from the principality in fear of being deposed, and the sultan nominated as his successor Prince Alexander Souza, who only survived two years. At his death a general insurrection broke out, extending to Greece and the islands of the Grecian archipelago, of which Theodore Vladimiresko, a native boyar, was the leader. A civil war of the most terrible character followed, and for a year the principality was ravaged by the contending armies, till it was utterly desolated. The Turks finally subdued the insurrection (see YPSILANTE), and reduced the country to vassalage, under which it remained till 1828, when a new war broke out between the Russians and Turks, and the former took possession of the principality; they evacuated it the next year, but by the treaty of Adrianople retained the right to exercise a protection over it. The subsequent course of events is narrated under the title MOLDAVIA. A central commission for the two principalities has been established at Fokshany (a frontier town partly belonging to Moldavia), the president of which is a Moldavian and the vice-president a Wallachian, and the latter has also been appointed minister of war of the united principalities.

WALLACHIAN LANGUAGE AND LITERATURE. The Wallachian or Rouman language arose at the beginning of the 2d century, when Dacia was made a Roman province, and gradually Romanized by the establishment of numerous colonies, out of a mixture of the original language of the Dacians, which was probably akin to the Albanian, and the Latin. The influence of the Latin has been in almost every respect formative; only in a few points, as the appending of the article to the substantive, the Dacian element can still be traced. From the Slavic, with which the Wallachs came into close contact at the beginning of the 6th century, a large number of words were derived, but the structure of the language was not affected by it; and the Wallachian cannot therefore be classed among Slavic languages, but belongs, with the French, Italian, Spanish, Portuguese, and Romansh, to the Romanic family of languages. It is spoken in two slightly differing dialects: the Draco-Wallachian, the language of the great majority of the Wallachs of the Danube, in Moldavia, Wallachia, Transylvania, the Bukovina, the Banat, and eastern Hungary; and the Macedo-Wallachian (or Kutzo-Wallachian), which is the dialect of the Wallachs scattered in the provinces formerly called Thrace, Macedonia, and Thessaly. The Wallachians use the Latin, as well as Cyrillic alphabet, which they obtained from the Bulgarians; but the Greek alphabet is also occasionally used. The following are the principal features of the language. The substantives are indeclinable, and admit only for the plural a change of termination similar to the Italian: *domnu*, master, pl. *domni; ochiu*, eye, plur. *ochi; os*, bone, plur. *óse; páne*, bread, plur. *páni*. For the formation of the several cases the article is used, which is appended to the substantive; as *domnu'l*, the master, gen. *a domnu'lui*, dat. *domnu'lui*, acc. *pre domnu'l*, voc. *o domne*, abl. *dela domnu'l;* plur. *domni-i*, *a domni'lor*, &c. The indefinite article is *un*. If an adjective is connected with a substantive, the article with its case-ending is appended to the first-placed of the two, whichever it may be, as *pomu'l dulce* or *dulce le pomu*, the sweet apple. There are two genders, masculine and feminine, the latter serving at the same time as neuter. There are several augmentative (*oiu*, *ón*) and diminutive (*utiu*, *isoru*, *elu*, *celu*, &c.) endings. The comparative is formed by means of *mai* (more), and the superlative by means of *quelu mai*, plur. *quea mai*, or by *pré* (very). The declension of the pronouns is very irregular, and the possessive pronoun is (as in Italian) preceded by the definite article. The conjugation is also very similar to the Italian; as (*jo*) *laudu*, I praise, (*tu*) *laudi*, (*el*) *laudá*, (*noi*) *laudámu*, (*voi*) *láudati*, (*ei*) *laudá;* imperf. *laudaam;* perf. I. *láudai;* perf. II. *amu láudatu;* pluperf. I. *amu fostu láudatu;* pluperf. II. *láudasem;* fut. *voiu láudà;* imperf. *laudà;* infin. *laudare*. There is also a subjunctive for every tense, a supine, a gerund, and 3 participles. The irregular verbs closely resemble those of the other Romanic languages. The Wallachian language has been most thoroughly treated of by Diez, *Grammatik der romanischen*

Sprachen (3 vols., Bonn, 1836-'44). For practical purposes there are grammars (of the Daco-Wallachian) by Klein and Shinkay (Vienna, 1780), Molnar (Vienna, 1788), Alexi (Vienna, 1826), Clemens (Hermannstadt, 1836), and Vaillant (Hermannstadt, 1846); and a dictionary by Clemens (Hermannstadt, 1823).—The literary cultivation of the Wallachian language is of recent origin. For a long time the church Slavic (Old Slavic) was the official language of the Wallachs in church and state. Many manuscripts of church books are still extant, and a collection of Old Slavic documents important for the history of the Wallachs has been published by Wenelin (St. Petersburg, 1840). The study of the Wallachian language was efficiently encouraged by an order of George Rákóczy, prince of Transylvania (1643), which directed the archbishop Simon Stephen to have the word of God preached to the Wallachs in their native tongue. Yet their literature for some time was confined to the translation of their numerous and mostly voluminous church books. When in 1716 the native waywodes had to yield to the Greek hospodars, Romaic became the language of the educated, and in Moldavia and Wallachia but little attention was paid to the Wallachian, which continued to be cultivated only in Transylvania. More recently Moldavia and Wallachia have begun to emancipate themselves from the influence of the Greek, and French literature has become a favorite study of the higher classes of the population, and has generally furnished models to the young generation of Wallachian authors. Among these deserve to be named Peter Major, George Shinkay, and Michael Kogalnitchan, as historians; Bobb, Peter Major, and J. Eliad, as lexicographers and grammarians; Alexandri, G. Alexandresko, C. Aristia (translator of the Iliad), Assaki, Beldiman, N. and J. Vakaresko, A. Donitch, J. Eliad, Mumulean, Negrutzi, J. Rosetti, and others, as poets and translators. Of Wallachian songs but few specimens have become known in other countries. A collection of Wallachian legends has been published in a German translation by Arthur and Albert Schott (Stuttgart, 1845).

WALLACK, James William, an English actor, born in London in 1795. Both his parents were on the stage, his father, William Wallack, being a distinguished comedian and vocalist, and his mother, Elizabeth Field, playing the leading female characters with Mr. Garrick for several years. He made his first appearance in London at the age of 7, and after playing boys' parts for some time passed to the academic theatre established by Queen Charlotte in Leicester street, Leicester square, where English and German children appeared on alternate nights. Here he attracted the notice of Richard Brinsley Sheridan, who gave him an engagement at Drury Lane. When that theatre was burned down, he went to Ireland; but he returned to England in 1813, and on the opening night at the new Drury Lane appeared as Laertes in Hamlet. At the age of 22 he replaced Mr. Booth in playing Iago to Kean's Othello. About this time he received tempting offers from New York, and having by the intervention of Lord Byron, who was his personal friend, obtained two years' leave of absence from the management of Drury Lane, he made his first appearance in America at the Park theatre, New York, Sept. 7, 1818, in the character of Macbeth. After two years of remarkable success in this country, he returned in 1820 to London, where he remained only one season, making then a second visit to America. Having been injured shortly afterward by the upsetting of a coach, he went home to recruit, but returned for another season to the United States, and after that became stage manager of Drury Lane under Elliston, performing also the leading characters. In 1836 he opened the national theatre at the corner of Church and Leonard streets, New York. It was burned down in 1839, and during the next 10 years Mr. Wallack played star engagements alternately in the United States and Great Britain. In 1851 he fixed his residence permanently in New York, and established Wallack's theatre on Broadway, where he enjoyed uninterrupted success for many years, the establishment being distinguished by a uniform artistic excellence in its stock company, and a careful regard to the proprieties of scenery and costume which gave it eminence among American theatres. In 1861 he built a new theatre near Union square. For several years he has ceased to act.—His son, John Lester, born in New York in 1819, is a popular light comedian and eccentric actor, and has written several successful plays: "First Impressions" (1856), "Romance of a Poor Young Man," adapted from Octave Feuillet's book, and "The Veteran," all produced at his father's theatre. He married a sister of Millais the painter.—James W., jr., nephew of James W. Wallack, sen., has played in this country, England, and Australia with considerable success. His most remarkable performances are in "Werner" and the "Iron Mask."

WALLENSTEIN, or Waldstein, Albrecht Wenzel Eusebius von, count of, and duke of Friedland, Mecklenburg, and Sagan, an imperial general in the 30 years' war, born in the castle of Hermanic, Bohemia, Sept. 15, 1583, assassinated in Eger, Feb. 25, 1634. He belonged to a noble Protestant family of Bohemia, and during his earliest years manifested that impatience of control and haughtiness of disposition which formed so marked a characteristic of his after life. When only 7 years old he was punished by his mother for some fault. "Why am I not a prince?" said the indignant boy; "nobody should venture to chastise me then." During his boyhood he was educated at a school in Koschumberg, and after the death of his father in 1595 was sent to the school of the Jesuits at Olmütz, where he was converted to the Roman Catholic faith. From this place he went to the university of Altdorf, and from there to Bologna and Padua, where he especially devoted himself to the study of judicial astrology, in which during his whole life he was a firm believer. He also travelled through Italy, Germany, France, and the Netherlands, and upon returning to his native country entered the army of the emperor Rudolph, then fighting in Hungary against the Turks. Here he distinguished himself highly, and on the walls of the conquered fortress of Gran was made a captain by his commander-in-chief, Gen. Basta. With this rank he returned after the peace of 1606 to his estates in Bohemia, and married an aged widow, Lucretia Nikessin von Landeck, by whose death in 1614 he became the possessor of large estates in Moravia; and as he also inherited 14 estates from his uncle, he became one of the richest noblemen of Bohemia and Moravia. In 1617 he took a prominent part in the archduke Ferdinand's war against Venice, levying at his own expense a small body of cavalry, and saving the fortress of Gradisca when nearly taken by the enemy. His liberality made him the favorite of the soldiers, and his boundless activity and military genius gained him the attention of Ferdinand, whose influence raised him to the ranks of count and colonel. The same year he was married to Isabella Katharina, daughter of Count Harrach, one of the imperial ministers, by which alliance his power at the court was largely increased, and the emperor Matthias made him count of the holy Roman empire. The states of Moravia made him commander of their militia; and on the outbreak of the 30 years' war he was offered a command by the Bohemian insurgents. This he refused, and his estates in Bohemia were in consequence confiscated. He saved the military chest of the emperor, raised a regiment at his own expense, and, with the rank of major-general, highly distinguished himself in the campaign of 1619 against Count Thurn and Gabriel Bethlen of Transylvania. When the battle of the White mountain near Prague, Nov. 8, 1620, annihilated the hopes of the Bohemian insurgents, who had chosen the elector palatine Frederic their king, their estates were confiscated and divided among the adherents of the emperor. Many of these were sold by Ferdinand, who had succeeded Matthias, for a small sum to his partisans, and Wallenstein for the price of about 7,000,000 gulden received as his share 60 lordships. In 1623 he was still further rewarded by the title of prince of Friedland. He at this time possessed a fortune of 30,000,000 gulden, and was constantly increasing it by the excellent management of his estates, and the collection of taxes. In 1625 the situation of the emperor, in spite of past successes, was alarming. The states of Lower Saxony had met on March 25 at Segeburg, and entered into a confederacy for the preservation of their religion and their liberties. Christian IV., king of Denmark, had been elected head of the league, and had joined his forces to those of the confederacy. Mansfeld and Christian of Brunswick were rapidly assembling a new predatory army on the side of France and the Low Countries. The hereditary dominions of the house of Austria were in a disturbed state, and there was no money in the treasury to raise or equip an army. At this crisis Wallenstein came forward and offered to levy, equip, and support at his own expense an army of 50,000 men. There was no one connected with the court who did not regard this project as the dream of a madman; but the emperor confided in the energy and genius of his subject, and the extraordinary situation of his affairs rendered it necessary to resort to extraordinary measures. Permission to raise the men and nominate his own officers was therefore granted. The prospect of advancement, the certainty of reward, and the hope of booty soon drew to the standard of the new general adventurers from all parts of Germany. In a few months he left the Austrian frontiers with an army of 20,000 men; his march to the borders of Lower Saxony increased his force to 30,000, and in a short time it exceeded the number promised. He was ordered to unite his army with the troops of the league under the Bavarian general Tilly, and the two were then together to attack the king of Denmark. But the imperial general had no mind to serve a subsidiary part, or to contribute by his aid to the glory of a rival; and first advancing as if to join the Bavarian army, he suddenly turned toward the Elbe, plundered the wealthy and as yet untouched districts of Grubenhagen, Halberstadt, and Magdeburg, and intrenched himself at Dessau. Christian of Denmark, who now saw himself threatened on both sides, sent Mansfeld to keep the army of Wallenstein in check. On April 25, 1626, Mansfeld attacked the camp of the imperialist at the Dessau bridge, but was driven back with heavy loss. Retreating into the mark of Brandenburg, and there reassembling his forces, Mansfeld broke suddenly into Silesia, and from there into Hungary to unite his troops with those of Bethlen, in order to carry the war into the heart of the Austrian states. But on this march he was followed by Wallenstein at the head of 30,000 men, and the two armies stood facing each other for a time, while disease and exposure decimated the ranks of both. But a truce with Bethlen and the death of Mansfeld relieved the empire from any danger in that quarter, and Wallenstein, raised in 1627 to the rank of duke, now prepared for a campaign in northern Germany. His army poured like a torrent over Brandenburg, Mecklenburg, Holstein, and Schleswig, and the conquered provinces soon felt in all its horror the plan of making war self-supporting. Meanwhile the army, supported by the plunder of the suffering lands, was raised to 100,000 men. The commander lived in kingly state, spending vast sums on his followers, and giving away vast sums to increase his influence at court. The emperor sold him the duchy of Sagan for 125,000 gulden. Early in 1628 the two dukes of Mecklenburg were put under the ban of the empire, and their territory was transferred to Wallenstein, who was soon after created generalissimo by land and sea. He now determined to carry out the design of the emperor, and make himself master of the Baltic. Wismar was captured and made his principal maritime station. Ships were demanded from the Poles and from the Hanse towns, in order to destroy the naval supremacy of Denmark, and conquer a peace which should open the way to greater conquests. For this purpose, however, it was necessary to take Stralsund, one of the Hanse towns; but the common danger had caused Christian IV. and Gustavus Adolphus to lay aside their mutual jealousies, and take measures for the defence of the city. Assault after assault was made by Wallenstein, who declared he would take Stralsund " even if bound to heaven with chains of adamant." But here his pride was destined to receive its first check. The garrison was reënforced by Swedish soldiers, who defied his attacks by land, and the fleets of Sweden and Denmark held the undisputed control of the sea. At length, after several months vainly spent, and after a loss of 12,000 men, Wallenstein withdrew his shattered forces from the siege. The power of the king of Denmark, however, had been crushed in the war; and in May, 1629, a congress was opened at Lübeck and a treaty made, which left the emperor at liberty to prosecute his designs for the extermination of the Protestants. But the leaders of the Catholic league, especially the proud and powerful Maximilian of Bavaria, were not disposed to yield readily to the wishes of Ferdinand. Disgusted with the rapid rise and haughty manners of Wallenstein, they clamored for his removal, and their complaints and threats received additional weight from the outcry of the provinces which had groaned under his exactions. At length, early in 1630, Ferdinand sent two of his most intimate friends to inform him of his dismissal, with every assurance of his respect and regard. To the surprise of friends and enemies, Wallenstein at once obeyed. Seni, the Italian astrologer, who exercised a singular control over him, had assured him that his glorious career was by no means ended. Receiving with calmness the imperial messengers, he laid before them an astrological calculation, and said: " By these signs I know your message ; the emperor is betrayed ; I pity him, but I forgive him. It is clear that the imperious spirit of the duke of Bavaria rules him. True, I am pained that he should have given me up with so little opposition, but I will obey." Hereupon he presented the ambassadors with rich presents, and sent by them a humble letter to Ferdinand, in which he implored the continuance of his favor and his protection in the enjoyment of his dignities. The army was indignant when his removal became known. The best officers quitted the imperial service ; many followed him to his estates, and others he supported by pensions. At his principal residence in Prague, where he built a magnificent palace, he maintained the pomp of a king. Six gates led to the palace, and 100 houses were levelled in order to make room for the courtyard. Gentlemen of the noblest families were anxious for the honor of serving in his train. He himself, however, clothed with greater reserve and haughtiness than formerly, waited patiently for the revenge which the victorious march of Gustavus Adolphus was soon to bring him. From the moment of his dismissal, defeat and disaster had overtaken the Austrian armies everywhere. Tilly had been defeated on the plains of Leipsic, and had died in consequence of a wound received in an unsuccessful attempt to prevent the Swedish army from crossing the Lech. Gustavus, having reduced all northern Germany either into submission or alliance, had marched into the territories of the Catholic league, and now began to threaten the integrity of the hereditary states. Bohemia fell into the hands of the elector of Saxony, and with the fall of Prague, which Wallenstein made no effort to defend, the road lay open to Vienna. The spirit of the emperor was at last broken, and he saw himself under the necessity of applying to the general he had discarded. But Wallenstein had neither forgotten nor forgiven his previous disgrace, and had determined that nothing should be omitted which could humiliate his sovereign, and nothing should exist which could render his second dismissal possible. He therefore affected extreme reluctance to comply with the royal summons, while his numerous secret partisans at court were constantly dwelling upon his claims, and declaring that he alone could save the empire. He refused to go to Vienna, but repairing to Znaym in Moravia, he there carried on his negotiations with the government. An offer of a command under the archduke Ferdinand, son of the emperor, he instantly and haughtily rejected, accompanying his refusal with the blasphemous declaration that he would not serve under God himself. At last he consented with apparent reluctance to raise troops as he had done previously, but would not agree to take the command for a longer time than 3 months. No sooner was the fact known than an army seemed to spring up as if by magic. Men rushed to his standard from all parts of Germany, and at the end of 3 months he found himself at the head of a disciplined and well appointed army of 40,000 men. He now prepared to resign his command, but the rapid march of Gustavus toward the Danube left Ferdinand no choice but to accept the services of his subject on terms most degrading to the sovereign authority. Wallenstein was made generalissimo of all the forces of the empire, both imperial and Spanish, with supreme authority ; officers were to be nominated and to be rewarded and punished by him; no pardon or safe conduct, even if signed by the emperor, was valid unless confirmed by him; no restriction was to be placed upon him in levying contributions or in disposing of the confiscated property of the enemy; his demands for money or provisions were to meet with instant attention; no peace nor truce could be made without his consent, or at least his knowledge; neither the emperor nor his son was to enter his camp; and finally, remuneration for his expenses was to be afforded him from the conquered provinces of the enemy or the hereditary countries, and the possession of Mecklenburg was to be secured by a special article; and when Bohemia was reconquered, the emperor was to take up his residence in Prague. Putting his army in motion, Wallenstein drove the Saxons out of Bohemia, and after witnessing with secret pleasure the devastation committed on the territory of his enemy, Maximilian of Bavaria, he marched to Eger as soon as Gustavus Adolphus threatened to enter the Austrian states. By a series of feints he forced Gustavus to act on the defensive, and give up his plan of attacking the hereditary countries. Uniting his forces with those of the elector of Bavaria, he marched at the head of an army of 60,000 men against Gustavus, intrenched with less than one third of the number in Nuremberg. Confident of success, he boasted that a few days would show whether he or the king of Sweden was to be the master of the world. But the presence of the greatest general of his age awed even the presumptuous spirit of Wallenstein. For 8 weeks he remained near Nuremberg, without daring to attack the inferior forces of his foe, who at last, having collected his troops from every quarter, defiantly offered him battle. But Wallenstein would risk nothing, and on Aug. 24, 1632, Gustavus led his troops to the assault of the fortified camp of his antagonist. After a battle which Wallenstein declared was the most desperate he had ever witnessed, the Swedish army retreated with a loss of 3,000 men. For 14 days longer the armies stood facing one another, when Gustavus, securing Nuremberg, marched away unmolested. But the 72 days in which the opposing troops had watched the movements of each other had not been without their effect. Famine and disease had destroyed more than the sword. The northern monarch had lost 20,000 men, and Wallenstein found his army reduced from 60,000 to 30,000. Gustavus now pursued his conquests in Bavaria, while the imperial general prepared to overrun Saxony, and thus detach that powerful state from the Swedish alliance. At Merseburg he united his forces with those of Pappenheim, but the rapid march of the Swedish king prevented him from consummating his design of hindering a junction of the Swedish and Saxon armies. Gustavus came up with the imperial army at Lützen, half way between Leipsic and Weissenfels, and Wallenstein, fearful alike of meeting his antagonist and of retreating before him, called a council of his officers, who unanimously voted for battle. To this decision he was more inclined to listen, because the astrologer Seni had assured him that the month of November was full of unfavorable omens for Gustavus. He therefore maintained his position, and awaited the attack of the Swedish army, which about midday of Nov. 16 moved to the assault. The battle lasted with varying success until nightfall, when Wallenstein retired with the loss of his bravest troops and all his artillery. The Swedes remained masters of the field, but had purchased their victory with the death of their king. Wallenstein now abandoned Saxony, and fell back into Bohemia, where he made an effort to diminish the moral effect of his defeat by executing 17 officers for cowardice, attaching the names of 50 others to the gallows, and rewarding those who had distinguished themselves by courage or skill. The winter he spent in preparing for the campaign of the ensuing year, which, in spite of the death of Gustavus, threatened to furnish him full employment. The brave, disciplined, and formidable Swedish army still remained; and a succession of commanders trained in the school of Gustavus would not give up their conquests without a struggle. In May, 1633, Wallenstein took the field and assembled his forces between Pilsen and Eger, and, after delaying his enemy by negotiations and armistices, marched to the frontiers of Silesia, and by a series of skilful movements obtained possession of a number of important places in that province, in the mark of Brandenburg, and in Lusatia. In October he surprised a body of 5,000 Swedish troops, under Counts Thurn and Duval, at Steinau on the Oder. He now determined to break the power of Sweden by carrying the imperial arms to the shores of the Baltic; but the intrigues of his enemies had begun to destroy his influence at court, and his own conduct hastened the ruin which others were striving to effect. Ferdinand submitted impatiently to the hard conditions which had been imposed upon him in his hour of weakness, and countenanced or connived at evasions of his promises, so as to reduce the power conferred upon his general. The correspondence, too, which Wallenstein unceasingly carried on with Saxons and Swedes, was represented to the emperor as traitorous; and his personal enemy, Maximilian, did all in his power to place many actions of the imperial commander in a suspicious light, which indeed was in many cases a matter of no difficulty. In the meanwhile the Swedish army, under Bernhard of Weimar, rapidly swept over Bavaria, and began the siege of Ratisbon. The emperor ordered Wallenstein to hasten to the relief of the place; the general, though indignant at the violation of the promise made him on assuming the command, did not openly disobey, but rather eluded the repeated demands for succor. Assistance was at last given, but slowly, grudgingly, and ineffectually. Bavaria was overrun, and Wallenstein, who had made no strenuous exertions to defend it, closed the campaign by taking up his winter quarters in Bohemia and Moravia. Every influence was now brought to bear upon Ferdinand to induce him to free himself from the overgrown pride of his general. But it was unsafe to abruptly dismiss a man at the head of a large army, formed by himself, and devoted to his fortunes. An effort was made to weaken his power by depriving him of a portion of his force, and Wallenstein, who had hitherto treated with contempt the intrigues of his enemies, now woke up to a sense of his danger. He hastened to Pilsen, and there summoned the officers of his army, when he made them a speech upon his services and his wrongs. "For my part," he continued, "I am determined to resign my command before I am dismissed, and only feel for the fate of my brave and worthy soldiers, the companions of my victories and the sharers of my dangers, who are going to be separated from each other, and ordered to march, in the midst of a severe winter, from these comfortable quarters which I had provided for them. I regret still more that I cannot confer upon them the rewards of their valor, which they so eminently deserve, and I promised to bestow—promises which I hoped to fulfil in the next campaign." Under the influence of this address 50 of the principal officers signed a memorial imploring Wallenstein not to resign his command, and promising to sustain him at the risk of their lives and fortunes. Gallas, the second in rank, aware of the disgrace that was about to fall upon his chief, refused to appear at Pilsen, as did also several others of the higher generals. Ottavio Piccolomini, who according to some subscribed the memorial, hastened to Vienna, and, reaching there in the middle of the night, informed the emperor of what had happened, and dignified the dissatisfaction as a rebellion of the army. An order was immediately issued by Ferdinand, depriving Wallenstein of his command, placing him under arrest, and intrusting to Piccolomini the duty of seizing his person either dead or alive. The command of the army was given to Gallas, who soon drew over to his side most of the troops, and took possession of the chief fortresses in Bohemia. Wallenstein was utterly confounded when he heard of this change in his affairs, and he was now driven into the rebellion with which he had before been charged. He sent officers to the Swedes and Saxons, offering to unite the best portion of his army with theirs; but so often before had he deceived them by artifices of a similar character, that only an evasive answer was returned. The occupation of Prague and the other Bohemian fortresses likewise placed him in a dangerous position, and he now retired to Eger, whence he sent men and pressing messages to the duke of Weimar. In this strong fortress he was confident of maintaining himself until the arrival of the Saxons and Swedes, and probably would have done so had he not been betrayed by some of his officers, including Gordon, governor of the city. These men, pretending to be devoted to his cause, formed a plan of assassinating him and his immediate friends; and gaining over to their project three captains, named Devereux, Burke, and Geraldine, they fixed the time for Feb. 25. On that night an entertainment was given to the prominent partisans of Wallenstein in the castle, in which they were massacred; and after accomplishing this deed, Devereux hastened at the head of 30 men to the apartment of the general, who, roused by the tumult, stood at the window, which he had opened, and was calling for assistance. "Are you the traitor," demanded the assassin, "who is going to deliver the imperial troops to the enemy, and tear the crown from the head of the emperor?" Wallenstein disdained to answer either this or some other remarks addressed to him, and with outstretched arms received in silence the halbert plunged into his body. The adherents of the departed chieftain were proscribed and punished by the imperial court; and as some stain rested upon the government for its share in the assassination, an apology was drawn up by the order of the emperor, under the title of "A Circumstantial and Authentic Narrative of the Treacherous Conspiracy of Wallenstein and his Adherents," in which an ingenious effort was made to blacken his memory, and make him guilty of treason from the time of his first dismission. This was for a long time the prevailing belief; but F. Förster, in his biography of Wallenstein (Potsdam, 1834) and *Wallenstein's Process* (Leipsic, 1844), has succeeded in proving the innocence of the general. Upon the ground of these researches, Count Christian von Waldstein-Wartenberg, the present representative of the family, has made an effort to obtain the restoration of the estates confiscated to the imperial treasury on account of the supposed treason of his ancestor, but so far without success. The dramatic trilogy of Schiller, entitled *Wallenstein's Lager*, *Die Piccolomini*, and *Wallenstein's Tod*, rests upon historical foundations; but some of the characters, as Thekla and Max, are simply creations of the poet's imagination.

WALLER, Edmund, an English poet, born in Coleshill, Hertfordshire, March 3, 1605, died in Beaconsfield, Buckinghamshire, Oct. 21, 1687. He was a cousin of John Hampden, and distantly related to Oliver Cromwell. In 1616 his father died, leaving him an estate of the value of £3,500 per annum. Waller was educated at Eton and at King's college, Cambridge, and his earliest biographer, in the memoir prefixed to the edition of his poems in 1711, states that when 18 years old he sat in the house of commons as member for Amersham in Buckinghamshire. He represented this borough in the subsequent parliaments until his expulsion in 1643, except in 1625, when he was chosen from Chipping-Wycombe. When about 18 he is said to have written his first poem, "On the Danger his Majesty (being Prince) escaped in the Road at St. Andero;" but if composed at this time it was doubtless rewritten at a later period. In 1631 he was married to a London heiress, Miss Anna Banks, who died in a few years. Waller afterward paid court to Lady Dorothea Sidney, daughter of the earl of Leicester, whom he has celebrated in his love songs under the name of Sacharissa; but she rejected his suit. They seem to have met occasionally in after years; and it is said that Sacharissa in extreme old age, and after she had been twice married, once asked the poet when he would write verses upon her again. "When you are as young, madam," was the ungallant reply, "and as handsome as you were then." He finally, however, contracted a second marriage. In 1640 Waller acted in parliament with the partisans of the popular cause, and in the long parliament was selected to present and enforce the articles of impeachment of Judge Crawley for the support of the ship money; although the movement proved a failure, Waller's speech was very able, and was so popular that 20,000 copies of it are said to have been sold in one day. He was no thorough-going partisan, however; although he retained his seat in the house, Clarendon states that he spoke with sharpness and freedom against many of the proceedings; and when Charles set up his standard at Nottingham in Aug. 1642, he sent him 1,000 broad pieces. In 1643, after the battle of Edgehill, Waller was one of the three commissioners who carried on the fruitless negotiations with the king at Oxford. Shortly afterward what is known as Waller's plot was discovered, although there is still doubt as to how far the conspirators intended to go. By the parliament it was called "a popish and traitorous plot for the subversion of the true Protestant religion and liberty of the subject," and by that body it was evidently understood as a design to seize the power of government, and gain possession of the persons of the leaders of the parliamentary party. On the exposure of the plot, Waller, according to Clarendon, "was so confounded with fear, that he confessed whatever he had heard, said, thought, or seen, all that he knew of himself, and all that he suspected of others, without concealing any person, of what degree and quality soever, or any discourse which he had ever upon any occasion entertained with them." Various persons implicated were hanged; but Waller, the chief conspirator, escaped with his life. To the parliament he delivered a speech begging for life, which for meanness and servility has hardly a parallel in history. After having been confined in prison a year, and subjected to a fine of £10,000, he went to France, living first at Rouen and afterward at Paris. In 1644 the first edition of his poems appeared. Through the influence of Col. Scroop he was permitted by the protector to return to England in 1653, and in 1655 addressed to Cromwell a poem, usually deemed his best production, entitled "A Panegyric to my Lord Protector, of the present Greatness and joint Interest of his Highness and this Nation." This was followed by a poem "On a War with Spain," in which he recommends to the protector to assume the title of king. Upon the death of Cromwell, Waller wrote a poem bewailing that event, which in his works is immediately followed by a congratulatory ode to Charles II. entitled "To the King on his Majesty's happy Return." Though full as flattering, the latter is by no means equal in point of poetical merit to the former; and when Charles remarked the fact, Waller replied instantly: "Poets, sir, succeed best in fiction." After the restoration he was a great favorite both in court and parliament. In the parliament of 1661 he sat for Hastings, in that of 1679 for Chipping-Wycombe, in that of 1685 for Saltash; and in 1675 Burnet says that he was the delight of the house, and at 80 said the liveliest things of any among them, although he never spoke on the real business before them, "being a vain and empty as well as a witty man." In 1665 the king nominated him to the provostship of Eton college, but Clarendon refused to put the seal to the necessary papers on the ground that the office could be held only by a clergyman; and on this account Waller joined the cabal which caused the downfall of the minister. The provostship was again offered him by Charles, but the council refused to sanction his appointment. One of his latest productions was entitled "A Presage of the Downfall of the Turkish Empire," which was presented by him to James II. A new edition of his poems appeared in 1664, and in 1690 a supplementary volume was published. His reputation for 100 years stood exceedingly high, but has not been maintained to the present time. He was considered a great refiner of English poetry, and his smoothness and sweetness have been praised by Dryden, Prior, and Pope; but his lines are often feeble, and his language is deformed by extravagant conceits.

WALLER, John Lightfoot, LL.D., an American clergyman and editor, born in Woodford co., Ky., Nov. 23, 1809, died in Louisville, Oct. 10, 1854. He was educated chiefly at home, and from 1828 to 1835 taught school in Jessamine co. He then became editor of the "Baptist Banner," published at Shelbyville. "The Baptist" of Nashville and the "Western Pioneer" of Alton, Ill., were subsequently merged in it, and the united paper, now called the "Baptist Banner and Western Pioneer," was edited during 2 or 3 years by Mr. Waller in conjunction with the Rev. Drs. Peck and Howell. In 1840 he was ordained to the ministry; in 1841 resigned his editorship to become the general agent of the Kentucky Baptist general association; in 1843 succeeded his father as pastor of the Glen's creek Baptist church; and in 1845 commenced the publication of the "Western Baptist Review," a monthly magazine, which he continued till his death, the title being changed in 1849 to the "Christian Repository." In 1849 he was elected a member of the constitutional convention of the state. Recalled to the editorship of the "Banner and Pioneer" in 1850, he was instrumental in the organization of the "Bible Revision Association," in which the Baptists in the southern and south-western states united, and which had its head-quarters at Louisville. In 1852 Madison university conferred on him the degree of LL.D. Dr. Waller published several controversial works, one of which was on "Communion," and another on "Campbellism."

WALLER, Sir William, an English parliamentary general during the civil war, born in 1597, died at Osterley Park, Middlesex, Dec. 19, 1668. He was a relative of Edmund Waller, was educated at Oxford and at Paris, and while abroad entered the service of the confederated powers in the war against the emperor. Returning to England, he was knighted by Charles I., and in 1640 entered parliament as member for Andover. While abroad he had imbibed the principles of the Presbyterian party, and is also said to have suffered after his return from the oppression of the star chamber. When hostilities broke out he was appointed second in command of the parliamentary forces under the earl of Essex; distinguished himself in the reduction of Portsmouth in Sept. 1642; subsequently sustained defeats at Lansdown, near Bath, July 5, 1643, and at Roundway Down, near Devizes, July 13 and Sept. 8; gained a victory at Cherryton Down, near Winchester, March 29, 1644; and on June 29 was again defeated at Cropredy bridge in Oxfordshire. These reverses led to mutual recriminations between him and Essex, in which Waller was strongly supported by his friends of the Presbyterian party. The passage of the self-denying ordinance in April, 1645, deprived him of military command, but in parliament he continued as one of the leaders of the Presbyterians, and as such was one of the 11 members of the house who in June, 1647, were impeached of high treason by the army, and expelled. Subsequently he returned, and continued to sit until the Presbyterians were driven out by Col. Pride, Dec. 6, 1648. In Aug. 1659, he was arrested on the charge of being engaged in the Cheshire insurrection of Sir George Booth, but was released on bail in the following November. On Feb. 25, 1660, he was one of the council of state appointed by the house of commons, and he sat in the convention parliament as member from Middlesex. His subsequent life appears to have been spent in retirement. He was the author of "Divine Meditations upon several Occasions, with a Daily Directory" (8vo., London, 1680), and of a "Vindication of Sir William Waller, explanatory of his Conduct in taking up Arms against King Charles" (8vo., 1793).

WALLICH, Nathaniel, a Danish botanist, born in Copenhagen, Jan. 28, 1786, died in London, April 28, 1854. He went to India in 1807 as surgeon to the Danish settlement at Serampore, and in 1815 was appointed by the English East India government superintendent of the botanic garden at Calcutta. While occupying this position, he made various excursions to Nepaul, the straits of Malacca, the western provinces of India, Oude, and other regions, during which he made a large collection of plants which had been previously unknown to the scientific world. He visited England in 1828, but returned to Calcutta in 1833, remaining there until he was obliged to resign his situation on account of his health in 1847, when he again went to England. He was chosen vice-president of the Linnæan society in 1849. Beside numerous papers and reports on botanical and horticultural subjects, he published *Plantæ Asiaticæ rariores* (3 vols. fol. London, 1829-'33), comprising 300 beautiful colored plates.

WALLIN, Johan Olof, a Swedish clergyman and poet, born in Dalecarlia, Oct. 15, 1779, died June 30, 1839. He was educated at the university of Upsal, and took orders in 1806. He is best known in his native country in connection with a popular collection of hymns. Having been appointed in 1811 one of a committee to revise the Swedish psalm and hymn book, and being unable to agree with his colleagues, he published a separate collection, including some of the old hymns slightly altered, and many of his own composition. Wallin's hymns became extremely popular, and have been adopted in the authorized Swedish psalm and hymn book. Several of his works on religious and literary subjects were published after his death. He was a popular preacher, became tutor in theology to Prince Oscar, and was created archbishop of Upsal in 1833.

WALLIS, John, an English mathematician, born at Ashford, Kent, Nov. 23, 1616, died Oct. 28, 1703. He was educated at Emmanuel college, Cambridge, took holy orders in 1640, and left the university in 1641 to act as chaplain to Sir William Darley. When the civil war broke out he took the parliamentary side, and was very useful in deciphering the intercepted letters of the royalists. In 1643 the sequestrated living of St. Gabriel, Fenchurch street, was given to him, and in 1644 he was appointed one of the secretaries of the assembly of divines at Westminster, of the proceedings of which he wrote a succinct account. He was among the first who joined those meetings, held in 1645, which afterward gave rise to the royal society. He does not appear to have given any particular attention to the study of mathematics until 1647, two years after which he was appointed Savilian professor of geometry at Oxford by the parliamentary visitors. While he held this office he had a mathematical controversy with Hobbes, which was carried on by pamphlets from 1655 to 1663. In 1658 he succeeded Dr. Langbaine as keeper of the university archives. He had in 1648 signed a remonstrance against the execution of Charles I., and he now favored the restoration, after the accomplishment of which he was confirmed in both his academical offices, and was named one of the king's chaplains in ordinary. He complied with the terms of the act of uniformity. His *Opera Mathematica* were published in 3 vols. (Oxford, 1697–'9); the most important of them is the *Arithmetica Infinitorum*, in which, as in some of his other writings, he foreshadowed some of Newton's greatest discoveries, such as the binomial theorem and the method of fluxions. He wrote also *Grammatica Linguæ Anglicanæ* (1653), *Institutio Logicæ* (1687), and several theological treatises.

WALLOONS, a name formerly given to that portion of the Belgians who were of Celtic origin, and whose language is essentially the French of the 13th century. The name is Teutonic, and is etymologically allied to Valais, Wales, &c. The "Walloon country" comprised the present provinces of Limburg, Liége, Namur, and Luxemburg, and a part of East and West Flanders. More than 1,800,000 of the present inhabitants of these provinces are mixed Celts, and speak the Walloon language.

WALLS, Gravel. See Gravel Walls.

WALNUT (*juglans*, Linn.), the name of large exogenous trees with imparipinnate and somewhat resinous leaves, and edible fruits which abound in oil. The common walnut tree is a native of Persia, but has been cultivated in Europe since 1562. It flourishes in gardens in the United States from Massachusetts southward and westward, and is known in New England as the English walnut, having been introduced there at an early period from the mother country. The 3 species of the true walnuts are typical of the natural order *juglandaceæ*, which also comprehends the hickories (*caryæ*), trees of many species indigenous to North America. (See Hickory.) The species from the East, also called commercially the Madeira nut, has several distinct varieties originating from its artificial conditions. The common walnut (*J. regia*, Linn.) is, when fully grown, a large and lofty tree with wide-spreading branches, the foliage abundant, consisting of pinnate leaves of 3 or 4 pairs, terminated by an odd one which is longer than the rest. An aromatic odor is very perceptible in them, especially if they are bruised, which is sometimes too powerful for some persons. The flowers are of two kinds; the barren flowers are borne in pendulous aments near the ends of the shoots, the calyx of a few scales surrounding a variable number of stamens; the fertile flowers are sessile, the ovary one-celled with one erect ovule, changing into a 4-lobed seed with crumpled cotyledons. The fruit is green, oval, and contains in the wild species a small hard nut, while in the cultivated varieties the nut is larger and its shell thinner, so much so that in some it can be readily crushed between the fingers. The kernel is covered with a pellicle, which peels off and leaves the rest white and clear from the shell; its flavor is deliciously sweet when freshly dried. The tree is readily raised from the seeds, bearing fruit in 15 to 20 years. The better varieties are propagated by grafting or by budding them upon inferior sorts. The common walnut was known to the ancients as the royal nut, whence the name *juglans* (*Jovis glans*, Jove's mast or food), and it is particularly mentioned in the writings of Strabo. The value of its timber has caused its extensive planting in various parts of Europe; and previously to the employment of the North American species, a high price was often paid for large trees to be used in the manufacture of musket stocks alone. When old and matured, it is prized as the most beautiful of European woods, and, being neither liable to crack nor twist, is much sought by turners, cabinet makers, millwrights, &c. A poor and hilly soil is considered the best to produce a fine-grained wood. The fruit of the walnut is well known on the table as a dessert, and in an unripe condition is employed in pickling, catsups, soys, and other sauces, being gathered when tender and young so as to be readily perforated with a needle. Gerarde tells us that the nuts "boyled in sugar are a pleasant and delectable meate." In southern Europe an oil is largely manufactured from the kernels which is employed by artists in mixing white or any delicate colors; it serves also as a substitute for olive oil at table or for culinary use, and for oil of almonds in medicine, and for burning in lamps; and the marc or refuse is employed in fattening fowls and in feeding sheep and swine. The sap of the tree is convertible into sugar, or may be fermented into wine; and the bark, leaves, husks, and roots yield a dark brown dye.—The black walnut (*J. nigra*, Linn.), a native of the United States, is a fine tree, with a broad rounded head and spreading branches, its bark rough and furrowed, its leaves with 6 to 10 pinnæ and an odd one, its fruit round and on a short footstalk. The sterile flowers are loosely set on green, simple catkins, 4 to 6 inches long, and issuing from the axils of the last year's leaves; the calyx is of 6 rounded lobes enclosing 20 to 30 green short stamens. The fertile flowers are sessile on a terminal common footstalk an inch or more long; the perianth of 6 to 8 parts, the styles 2, very short; the stigmas 2, fringed; the fruit globose, nearly smooth or somewhat granulate, turning to a dark brown when ripe; the husk or outer covering, which is thick and spongy, enclosing a rough, deeply furrowed, round, hard-shelled nut, with a sweet rich kernel abounding in oil. The timber of the black walnut is of great value, the wood being of a purple or dark violet, and becoming very dark colored with age, the grain fine; hard, strong, and durable, it is preferred to any other material for gun stocks; it is also extensively employed for cabinet work and door panels, and in outdoor uses for posts. The tree is desirable for its shade, and ornamental in planting, being well adapted to the climate from Massachusetts southward and westward. It is easily raised from seed, and grows rapidly. A valuable oil is expressed from the kernel, and the spongy husks afford a domestic dye stuff. The presence of the tree is considered indicative of a fertile soil.—The white walnut or butternut (*J. cinerea*, Linn.) is also a beautiful though low and broad-headed tree, growing 20 to 30 feet high, with numerous spreading branches and a smooth ash-colored bark; its leaves, 12 to 18 inches long, consist of 6 to 18 pinnæ terminated by an odd one on a long footstalk. The sterile flowers issue from the sides of the last year's shoots in long green catkins, each flower enclosing 8 to 12 brown sessile stamens; the fertile flowers are 2 to 7 on a terminal downy stalk; the flowers expand in May and the fruit ripens in October. The form of the fruit is oblong ovoid; it is crowned at the summit by the stigma and ends of the calyx, and invested with glandular hairs secreting a resinous and odorous substance; the outer husk is thin and tough, of a dark brown color when ripe, covering a hard, thick-furrowed, and sharply ridged and sculptured nut, about 2 inches in length, rounded at the base and acute at the apex; the kernel is sweet and pleasant, but soon turns rancid unless carefully dried. A mild and useful laxative is extracted from the inner bark of the root of the butternut tree, and the bark and shells afford a brown color used in dyeing wool. An inferior sugar can be obtained from the sap, and the leaves, which abound in acrid matter, have been employed as a substitute for Spanish flies. The half-grown fruit, gathered in June, is employed in making excellent pickles, first removing the downiness by scalding in water and rubbing with a harsh cloth. The timber is valuable, being tough and not liable to attack by worms. It is less hard than black walnut, but nevertheless may be used for gun stocks, being equally stiff and elastic, for coach panels, wooden bowls, and drawers in cabinet work, and for posts and rails or smaller joists in carpentry. The species is widely distributed, and is found in the Canadas, in New England and the middle states, in Kentucky, and on the banks of the Missouri.

WALPOLE. I. Sir Robert, earl of Orford, an English statesman, born at Houghton, in Norfolk, Aug. 26, 1676, died there, March 18, 1745. He was educated at Eton and at King's college, Cambridge, and upon succeeding to his father's estate in 1700 entered parliament as member for Castle Rising. He attached himself to the whigs, whom he aided in promoting the Protestant succession, became at once an active debater and politician, and in 1705 was appointed one of the council of Prince George of Denmark. Rising rapidly in the estimation of the whig leaders, he was in 1708 made secretary at war, and thereupon assumed the leadership of his party in the house of commons. He had the chief management of the proceedings against Dr. Sacheverell, which in private he had strenuously opposed; and upon the overthrow of the whigs in 1710 he retired from office, though urged by Harley, who declared he was worth half his party, to accept a seat in the new tory cabinet. In accordance with the practice which the embittered political spirit of the time imposed upon the party coming into power, he was impeached by the commons for misappropriation of the public money in his official capacity, and on Jan. 17, 1712, was expelled from the house and committed to the tower. His sentence, however, so far from impairing his character, raised his reputation with his party, and upon his release he was immediately returned for Lynn; he was however declared incapable of sitting again in that parliament, but entered the new parliament which met in 1713 as a member for the same borough. On the accession of George I. he entered the cabinet as paymaster-general of the forces, and drew up the report of the secret committee of 21, to which was referred the impeachment of the late tory ministers. During the rebellion of 1715 in favor of the pretender, he was appointed first lord of the treasury and chancellor of the exchequer; but, owing to the intrigues of Sunderland and others about the court, he was induced in April, 1717, with his brother-in-law Townshend, to retire from office. On the day of his resignation he brought forward a scheme for the reduction of the public debt, which may be regarded as the earliest germ of a national sinking fund. For several years Walpole remained in opposition, distinguishing himself by the zeal and ability with which he denounced the South sea scheme, the peerage bill of 1719, and other ministerial measures; and in 1720 he reëntered the cabinet as paymaster-general of the forces. In the same year the South sea bubble burst, and Walpole was generally called upon, as the person best qualified for the task, to repair the injury inflicted upon the public credit, which he successfully accomplished. In April, 1721, he became again first lord of the treasury and chancellor of the exchequer, and immediately turned his attention to the promotion of trade and manufactures, being one of the first to reduce or remove the heavy taxes on many important articles of export and import. In accordance with the practice by which the prime minister held a seat in the house of lords, he was offered a peerage, which he declined from apprehension that if he left the commons his influence would decay. His eldest son, however, was created a peer by the title of Baron Walpole, and he himself was in 1724 made a knight of the bath, and in 1726 a knight of the garter, the latter honor being one seldom bestowed upon a commoner. Upon the accession of George II. he was confirmed in office by the favor of Queen Caroline, in spite of the machinations of his opponents; and the influence of the same powerful friend was throughout her life exerted in his behalf. Subsequent to 1730, when Lord

Townshend left the cabinet, he was its supreme head, and no important parliamentary or administrative proceedings took place in which he was not the chief actor. In 1733 he introduced a scheme for converting the customs duties upon certain articles of import into duties of excise, and to ameliorate the laws of the excise in such a way as to obviate their abuse; but so artfully were the intentions of the ministry misrepresented by the opposition, that the public were induced to believe that a general excise was contemplated, and a storm of popular indignation was aroused, which fairly shook the kingdom to its foundations. Walpole therefore abandoned the bill amid universal rejoicings, a prominent feature in which consisted in the burning of himself in effigy. The death of Queen Caroline in 1737, and the public hostility of the prince of Wales, were the first circumstances tending to diminish the stability of his administration. The king, however, whom the queen on her deathbed commended to his care, remained his firm friend, and until 1739 he was enabled to maintain that pacific policy which had been one of the main objects of his administration, and which he considered necessary for the preservation of internal tranquillity. In that year, in accordance with the wishes of the king and a majority of the cabinet, the Spanish war was forced upon the kingdom; and Walpole, who, on somewhat doubtful authority, is said to have tendered his resignation, which the king refused to accept, was compelled against his own convictions to yield to popular clamor, and to accept an unjust war for the sake of avoiding a stormy session or perhaps an overthrow of his administration, when, "had he honestly resisted, the nation would have been speedily restored to reason." Discord increased in the cabinet, the opposition grew bolder, and although motions for his dismissal from office were in 1741 defeated by large majorities in both houses of parliament, he found his strength so greatly diminished after the general election in the same year, that upon being defeated, in Feb. 1742, on an election case, he resigned all his offices on the 11th of that month, having two days previous been created earl of Orford. The king received his resignation with great emotion, and having wept and kissed him requested to see him frequently. On motion of Lord Limerick, a secret committee was appointed to inquire into the conduct of the last 10 years of Walpole's administration; but in spite of the efforts of his enemies, no charge of venality could be substantiated against him, and the report of the committee not only recommended no further proceedings, but was received, according to Tindal, with public contempt. The ex-minister, though frequently consulted by the king, took little part thenceforth in public affairs, and died at his seat at Houghton after great suffering from the stone.—The general acquirements of Walpole were not remarkable, and his manners were coarse and boisterous even for the unrefined age in which he lived; his conversation, according to Savage, who had seen him familiarly at Lord Tyrconnel's house, ranging from obscenity to politics and from politics to obscenity. "But however ignorant he might be of general history and of general literature," says Macaulay, "he was better acquainted than any man of his day with what concerned him most to know, mankind, the English nation, the court, the house of commons, and his own office. Of foreign affairs he knew little, but his judgment was so good that his little knowledge went very far." He was probably the most dexterous party leader that ever sat in the house of commons, and by the exercise of rare political sagacity was retained for the unexampled period of 21 years in his place of power. The charges of corruption so freely brought against him in his own and in later times have probably been much exaggerated; and, as Lord Mahon has observed, "there is no small excuse for him to be found in the tone and temper of his age," which was corrupt almost beyond precedent. He was certainly not beyond his age in virtue, but he was himself incorruptible by money, and the heaviest charge that can be brought against him is his uncontrollable love of office, which ultimately caused his fall, and almost justifies the remark of Lord Chesterfield, that "he would do mean things for profit, and never thought of doing great ones for glory." On the whole, however, his administration was prudently directed to the maintenance of peace abroad and the progress of prosperity at home. II. Horatio, Baron Walpole of Wolterton, brother of the preceding, born in 1678, died in 1757. During the administration of his brother he held several important public offices, and officiated as a diplomatist of the first class. He was also known as a political writer, and produced a reply to Bolingbroke's "Letters on History." In 1756 he was raised to the peerage. III. Horace, 3d and youngest son of Sir Robert Walpole, and 4th earl of Orford, born Oct. 5, 1717, died in London, March 2, 1797. He was educated at Eton and at King's college, Cambridge, and after a continental tour in company with the poet Gray, with whom he quarrelled before its completion, he returned in 1741 to England, and entered parliament for the borough of Callington, to which he had been elected during his absence. His father's political overthrow followed a few months later, and Horace Walpole's first parliamentary speech was called forth by the motion to inquire into the last 10 years of the late minister's administration. With this exception he rarely addressed the house, in which he held a seat until 1768, his character and tastes being unsuited for public life, although he took a considerable interest in politics. A whig by the accident of birth and hereditary connections, and affecting an aversion to kings, which he illustrated by hanging in his house a facsimile of the death warrant of Charles I., with the inscription, *Major charta*, he was at heart a courtier and an aristocrat, talking glibly of republicanism and liberal principles when there was no probability of his sincerity being put to the test, and when the revolutionary spirit became uppermost exhibiting himself as a fanatical loyalist and alarmist. As a virtuoso and a man of letters he found his most congenial employment, and his life was devoted to the pursuit of literature and the gratification of a fastidious and whimsical taste, and very considerably also to retailing and recording the political gossip and fashionable scandal of the day. Being placed in comfortable circumstances by the possession of several sinecure offices bestowed upon him by his father, and which yielded him altogether about £4,000 a year, he busied himself for many years with building and decorating a "little plaything house" at Twickenham, called Strawberry Hill, which, from a modest cottage, grew in time into an irregular Gothic mansion of considerable size and questionable taste, or, as Macaulay calls it, "a grotesque house, with pie-crust battlements." Here he collected pictures, prints, books, manuscripts, armor, relics of antiquity, objects of *virtu*, and a thousand odds and ends, the sweepings of the auction rooms; and with a sort of "busy idleness" amused himself with printing on a private press, established in 1757, Gray's "Odes," a 4to. edition of Lucan, Hentzner's "Travels," and other works, including several by himself. His literary labors, with the exception of a few verses of no especial merit, commenced with the publication in 1752 of his *Ædes Walpolianæ*, which, though little more than a catalogue of his father's pictures at Houghton, showed the bent of his tastes and the effect of his favorite studies. It was succeeded by his "Catalogue of Royal and Noble Authors" (1758), in which a dull subject is enlivened by a sprightly style and a fund of anecdote, and which affords also a curious illustration of the strength of his aristocratic predilections; and by his "Anecdotes of Painting in England" (1761–'71) and "Catalogue of Engravers" (1763), both prepared from materials collected by Vertue the engraver. In 1764 appeared his "Castle of Otranto," published originally as a translation by William Marshall from the Italian of Onuphrio Muralto (intended as an anagram of his own name), and which may be regarded as the parent of the modern Gothic romance, and particularly of that school of fiction represented by Mrs. Radcliffe and M. G. Lewis. His remaining publications comprise "Historic Doubts on the Life and Reign of Richard III.;" the "Mysterious Mother," a drama founded on a revolting tale of incest, but which is so full of vigorous descriptive passages and striking imagery, that it is to be regretted he did not devote himself oftener to this species of composition; and a variety of minor works, some of which were printed on the Strawberry Hill press. He also projected a 4to. edition of his own works, which never proceeded beyond the 2d volume. The writings, however, which exhibit his qualities of mind and heart most characteristically, are his letters, the most entertaining collection perhaps, considered as a whole, in the language, and the productions by which Walpole will be best remembered. The style is singularly easy and appropriate, and the superabundance of scandal, gossip, wit, epigram, and anecdote gives to every page a special attraction. His letters to Sir Horace Mann, George Montague, Lord Hertford, and others, were first embodied in a uniform collection in 1841 (6 vols. 8vo.), and in 1857–'9 an enlarged edition of his "Entire Correspondence" was published under the supervision of Peter Cunningham. In addition to these he prepared "Memoirs" of the last 10 years of the reign of George II., published after his death, and of the first 12 years of the reign of George III., which first appeared in 1844 (4 vols. 8vo.). They partake to a very considerable degree of the characteristics of his correspondence, the author fancying, "when he recorded the gossip of Kensington palace and Carlton house, that he was writing history," but, like his letters, can be considered of no special value except as likenesses of himself. His judgment on literary or political subjects was so warped by his prejudices or temporary caprices, that in portraying the characters or motives of others, "he copied from the life only those glaring and obvious peculiarities which could not escape the most superficial observation," filling up the rest of the picture at random. But in spite of that "want of accuracy or veracity, or both," which, according to Hallam, renders his testimony comparatively worthless, his correspondence and memoirs will always hold a conspicuous place in literature from the fact that the author had learned the art of writing what people will like to read. At the age of 74 he succeeded his nephew as 4th earl of Orford, which title, as he was never married, expired with him. It was revived in 1806 in favor of his cousin, Horatio, 2d Baron Walpole of Wolterton. Walpole has been aptly described as "the most eccentric, the most artificial, the most fastidious, the most capricious of men;" and it may be added that his tastes inclined naturally to small and trifling things, while serious business he regarded as a trifle. Trifles, in fact, were his serious business, and the odd, as Macaulay has observed, "was his peculiar domain." Of his innumerable whims, none was more conspicuous than his aversion to be considered a man of letters, a character which he regarded as unfashionable and derogatory to his position in society. Yet he was greedy to excess of praise, keenly sensitive to criticism, and, with all his avowed contempt for literary fame, left fair copies of his private correspondence, with copious notes, to be published after his decease.

WALPOLE, Spencer Horatio, an English statesman, born Sept. 11, 1806. He was educated at Eton and at Trinity college, Cambridge, was in 1831 called to the bar, became in 1846 a queen's counsel, and in the same year entered parliament for the borough of Midhurst. Upon the accession of Lord Derby to office in 1852, he entered the cabinet as secretary of state for the home department, and in that capacity carried through parliament the measure for embodying the militia. After leaving office he became chairman of the great western railway, and in 1856 he was elected one of the members of parliament for the university of Cambridge, which constituency he still represents. He held the office of home secretary in the second Derby ministry until March, 1859, when he resigned on account of a difference of opinion with his colleagues in regard to the reform bill proposed by the conservative party.

WALPURGIS NIGHT (Ger. *Walpurgisnacht*), in Germany, the night before the first of May, or the vigil of St. Walpurgis (spelled also Walpurga or Walburga), a sister of St. Willibald, and a missionary from England to the Germans, who, after her death in 776 or 778, was canonized, and was reputed to have wrought many miracles. According to the old German superstition, on the Walpurgis night, which was also the vigil of St. Philip and St. James, the witches and wizards held their annual convocations, the most numerous and important being that on the Brocken, in the Hartz mountains; and it was an old custom, still preserved in some places, to burn straw on this anniversary for the purpose of counteracting the malign influence of these gatherings. The celebrated Walpurgis night scene in Goethe's "Faust" affords a vivid illustration of their character.

WALRUS, MORSE, or SEA HORSE (*trichechus rosmarus*, Linn.), a marine, arctic mammal, somewhat resembling the large seals in external appearance, but having many affinities with the pachyderms. The skull is not very large, though heavy, and its processes for muscular insertions are very well marked; the facial portion is more elongated than in the seals, and the anterior part of the upper jaw greatly developed for the canine teeth, between which the lower jaw shuts. In the young animal there are 6 incisors in each jaw, all falling out during growth except 2 in the upper; the upper canines are very long, hanging down as pointed tusks between the small canines of the lower jaw, and projecting a considerable distance below the chin; their points are sometimes bent toward each other, but are usually turned outward; they weigh from 5 to 10 lbs.; the molars are originally $\frac{5-5}{4-4}$, but fall out as age advances; they are conical, with simple blunt crowns, worn obliquely at the apex. The head is well proportioned to the body, rounded and obtuse; eyes small and bright; no external ears, and auditory openings far back; nostrils large, on the upper part of the snout, and capable of being accurately closed; muzzle very wide and tumid, and the lips remarkably thick and covered with large translucent bristles looking like quills of straw; the front view of the young animal, before the tusks have grown, has a very human aspect, and probably has in part given rise to the fabulous merman of the northern seas. The neck is short and the body bulky, broadest at the chest, and diminishing to the very short tail; the limbs are short and less fin-like than in the seals, the inside of the paws protected by a rough horny covering against violent contact with ice and rocks; the fore paws are a kind of webbed hand, capable of wide expansion and 2 to 3 feet long; the hind limbs extend straight backward, but are not united; all the fingers and toes have a small nail; there are 4 ventral mammæ. The skin is between 1 and 2 inches thick, with a covering of close brown hair, and under it is a thin coating of oily fat, enabling them to withstand the cold of the arctic regions. They attain a length of 12 to 15 feet, sometimes 20, a circumference of 8 to 10, and a weight of nearly a ton; the color is blackish in the young, brownish in the adults, and more and more whitish with age. They swim very rapidly, but are awkward on land, where they go to rest, and to bring forth and suckle their young, moving by jerks, assisting their advance by the teeth; they are monogamous, contrasting in this respect with many of the seals, and gregarious both in the water and on land; of peaceful disposition, and not afraid of man unless when hunted, they bravely defend their young and their wounded companions; when persecuted they become very wary, and when asleep on the ice floes or the land always set guards which awaken the herd by loud bellowings if danger threatens; they will carry off their wounded or helpless young with their fore paws. They often have terrific combats with the polar bear on the ice, and with the narwhal and carnivorous fishes in the water. They lie huddled together like swine in their resting places, making loud roarings if disturbed; they may be domesticated like the seals, if taken young, though they are far less docile. The tusks are used as weapons, being able to strike a heavy blow directly downward, for climbing on ice and advancing on land, and for tearing up the sea weeds from the bottom. For accounts of their habits see the numerous arctic voyages recently published, and especially "Seasons with the Sea Horses," by J. Lamont (8vo., London, 1860). The food consists almost entirely of sea weeds, with the bivalve shells attached to them, as in the manatee and the so called herbivorous cetaceans. Though the walrus has been generally classed with the seals, it has not the carnivorous dentition of the latter, but molars adapted for crushing and grinding; the stomach is elongated; the thick skin and shape of the head show pachyderm affinities; it may be said to be the marine form of pachyderms, as the seals are the marine form of carnivora. It is distributed in the arctic regions of both hemispheres, often confined to limited districts far removed from each other, and not met with in the intervening spaces; one of their favorite resorts is the sea about Kamtchatka and 10 to 15 degrees on each side on the American and

Asiatic shores; another larger one extends from the mouth of the Yenisei, on the N. coast of Siberia, westward to Baffin's bay and Prince Regent's inlet; its range extends as far as lat. 80° N., and formerly descended in the spring to the Magdalen islands in the gulf of St. Lawrence, in lat. 47° N.; it occasionally wanders to the coasts of Iceland, and it is especially abundant about Spitzbergen and Nova Zembla. The capture of the walrus is more dangerous and less remunerative than that of the seal, and is pursued both by land and sea; on the former the hunters attempt to take them by surprise, and, getting between the herd and the sea, to kill them in their awkward endeavors to reach the water. The chase of the walrus has been practised from time immemorial. So hazardous is it by water that the Greenlander never undertakes it alone; the skin is so tough that the harpoon enters with difficulty; when wearied with struggling after an obstinate chase, it is killed by spears and lances; it cannot bite, as the mouth is hardly larger than a man's fist. It is hunted for the tusks, oil, skin, and flesh. The tusks, which are often 2 feet long, afford a very white and hard ivory, prized for various purposes, and among others formerly for false teeth. It does not yield much oil, not more than 25 to 30 gallons from a single individual; but, if extracted before putrefaction has commenced, it is transparent, free from odor, and not unpleasant to the taste, and is then more valued than that of the whale. In old times the cordage of vessels in northern countries was made of the skin, also lines, cables, and chafing gear; when tanned it makes a soft porous leather more than an inch thick. The flesh is eaten by the Esquimaux and by arctic voyagers.

WALSH, Robert, an American author and journalist, born in Baltimore in 1784, died in Paris, Feb. 7, 1858. His father, an Irishman, was a merchant of Baltimore. The son was educated at the Roman Catholic colleges of Baltimore and Georgetown, studied law in the office of Robert Goodloe Harper of Baltimore, travelled for a while in Europe, returning at the age of 25, and commenced practice at Philadelphia, but soon abandoned the law for literary pursuits. His earliest literary contributions were made to "The Port Folio," a monthly periodical published in Philadelphia. In 1810 he published "A Letter on the Genius and Disposition of the French Government, including a View of the Taxation of the French Empire, addressed to a Friend by an American recently returned from Europe," in which he reviewed with ability and severity the policy of Napoleon. It made a profound impression, passed through 4 editions in England, and was reviewed with great favor by the "Edinburgh Review." In 1811 he commenced the publication of the first American quarterly review, "The American Review of History and Politics," which was however abandoned at the end of two years for the want of patronage. In 1813 appeared the "Correspondence respecting Russia, between Robert Goodloe Harper, Esq., and Robert Walsh, Jr.," and Mr. Walsh's "Essay on the Future State of Europe." In 1817 he commenced the publication of "The American Register, or Summary Review of Politics and Literature," which was discontinued at the end of the second year. In 1819 he published "An Appeal from the Judgments of Great Britain respecting the United States of America, Part First." In 1821 he became editor of the Philadelphia "National Gazette," which was started that year as a tri-weekly, but was subsequently published daily. While conducting this journal he was also connected with the "American Magazine of Foreign Literature," which he abandoned in 1822. In 1827 appeared under his editorship the first number of the "American Quarterly Review," which was continued 10 years, and for which he wrote a large number of the articles. A great portion of the work was devoted to American literature, history, and biography. For the "Encyclopædia Americana," edited by Dr. Francis Lieber, he furnished the articles on American biography. In 1836 he published a collection of his miscellaneous writings under the title of "Didactics, Social, Literary, and Political," in 2 volumes; and in 1837, the prosperity of the "National Gazette" having declined, he retired from its editorial management. About this time he went to Europe, where he spent the remainder of his life. In 1845 he was appointed consul of the United States in Paris, which office he held until 1851. He continued his literary labors almost to the latest hour of his life, being the Paris correspondent of the "National Intelligencer" and the New York "Journal of Commerce."

WALSINGHAM, Sir Francis, an English statesman, born at Chiselhurst, Kent, about 1536, died in London, April 6, 1590. He was educated at King's college, Cambridge, and travelled on the continent, returning after the accession of Elizabeth in 1558. Cecil gave him employment in the public service, and he was sent on diplomatic missions to France, whence he came home in April, 1573, to be made one of the principal secretaries of state and a member of the privy council, soon after which he was knighted. In 1578 he was ambassador to the Netherlands; in 1581 to France again; and in 1583 to James VI. of Scotland. In Oct. 1586, he took the chief part in the detection of Babington's conspiracy, and was one of the commissioners by whom Mary Stuart was tried and condemned. He was now made chancellor of the duchy of Lancaster, but continued to be Elizabeth's minister of foreign affairs. During the contest with Spain, ending substantially with the destruction of the armada, he evinced the greatest astuteness, patience, and fidelity to the cause of Protestantism and of England. Though the queen was long deceived as to the designs of Philip II. and of Alexander Farnese, Walsingham was not misled for a moment. He is said to have been a match for his subtle antagonists in all the deceitful arts which belonged to the diplomacy of that period; and there is a popular but unfounded story that he caused a letter of Philip's disclosing the secret of the armada to be taken from the pope's pocket, and then delayed the expedition a year by causing the bills for its outfit to be protested at Genoa. He was a man of rigorous personal morality and entire disinterestedness, dying so poor that his friends had to bury him. His only child, a daughter, married in succession Sir Philip Sidney, the earl of Essex, and the earl of Clanricarde. His state papers and letters were edited and published by Sir Dudley Digges, under the title of "The Complete Ambassador" (London, 1655). Other works attributed to him are not authentic.

WALTER. I. JOHN, founder of the London "Times," born in 1739, died in Teddington, Middlesex, Nov. 16, 1812. He was by trade a printer, and about 1780 became possessed of two patents issued to one Henry Johnson for an invention called logography, which consisted in printing with types representing entire words or syllables, and various combinations, instead of single letters. On Jan. 18, 1785, he published the first number of a newspaper entitled "The London Daily Universal Register, printed logographically," which on Jan. 1, 1788, was issued under the title of "The Times, or Daily Universal Register." He was for 18 years printer to the board of customs, but lost that employment in 1805 on account of the animadversions of the "Times" on Lord Melville's administration of the admiralty department. II. JOHN, son of the preceding, born in London in 1784, died there, July 28, 1847. At the age of 19 he became a joint proprietor and the exclusive manager of the "Times," which then circulated about 1,000 copies; and by energy, enterprise, and tact he succeeded in increasing the circulation within 10 years to 5,000 copies. He early interested himself in the improvement of the printing press, upon which he expended large sums; and the number of the "Times" for Nov. 29, 1814, was announced as the first sheet ever printed by steam, being executed on two of König's machines. At the time of the agitation of the reform bill and Catholic emancipation, the "Times" had reached a circulation of about 10,000 copies. In 1832 Mr. Walter, having purchased a large estate in Berkshire, was returned to parliament from that county. He was reëlected in 1835, and in 1837 resigned his seat in consequence of a difference of opinion between him and a majority of his constituents on the new poor laws. Subsequently he sat for a short time in 1841 as member for Nottingham. III. JOHN, son of the preceding, born in London in 1818, was educated at Eton and at Exeter college, Oxford, and since his father's death has conducted the "Times." He was called to the bar in 1847, and represented Nottingham in parliament from 1847 to 1859, when he was elected one of the members for Berkshire.

WALTHAM, a post village and township of Middlesex co., Mass., situated on the Charles river and on the Fitchburg railroad, 10 m. W. by N. from Boston; pop. in 1860, 6,397. The village is built principally on one extended street more than a mile in length, and has numerous fine residences, a bank with a capital of $200,000, a savings bank, several churches, and a gas light company incorporated in 1853. The town has extensive manufactories of bleached cotton goods, hollow ware, machinery, chemical preparations, watches, paper, cabinet ware, boots and shoes, &c. The Robbins and Appleton watch manufactory is situated in Waltham, and produces about 10,000 watches per annum.

WALTHER VON DER VOGELWEIDE (Walter of the bird meadow), the greatest of the German minnesingers, born in Franconia or Austria between 1165 and 1170, died in Würzburg about 1228. He was of a noble but not wealthy family, and learned the art of poetry under Reinmar, whom he made his model. He found his first patron at Vienna in Duke Frederic, and about 1187 began to compose poems. Upon the death of the duke, Walther, about the end of 1198, began to visit the courts of kings and princes, and for many years led a wandering life through all parts of Germany, and probably beyond its borders. He went first to the court of Philip of Swabia, but in 1200 was again in Austria at the court of Duke Leopold VII., the brother and successor of Frederic. After again serving in the train of Philip, he attached himself for 6 years to the retinue of Hermann, landgrave of Thuringia, and afterward wandered to various other courts. In 1220 he received from the emperor Frederic II. a valuable fief in Würzburg, where for a long time his grave was shown. In 1843 a new monument was erected to his memory. His early poems were chiefly love songs, but in later years he treated of the crusades and many subjects connected with the civil commotions in Germany. He was considered by his contemporaries as the master of lyric song, and by the later minnesingers was placed among the 12 who in the time of the emperor Otho IV. created the poetic art. Lachmann has published an edition of his poems (Berlin, 1827), and Simrock has translated them (2 vols., Berlin, 1833). Under the title of *Walther von der Vogelweide, ein altdeutscher Dichter* (Stuttgart and Tübingen, 1822), Uhland has given an account of his life and poetry; and Hornig has furnished a complete *Glossarium* for his works (Quedlinburg, 1844).

WALTON. I. A N. co. of Ga., bounded N. E. by the Appalachee river and drained by the head streams of the Ocmulgee and Oconee rivers; area, 320 sq. m.; pop. in 1860, 11,072, of whom 4,621 were slaves. The surface is elevated and undulating, and the soil generally fertile. The productions in 1850 were 426,516 bushels of Indian corn, 103,178 of sweet potatoes, 7,280 lbs. of rice, and 5,599 bales of cotton.

There were 13 grist mills, 11 saw mills, 3 tanneries, 32 churches, and 680 pupils attending public schools. Iron ore and granite abound, and gold has been found. The county is intersected by the Georgia railroad. Capital, Monroe. II. A N. W. co. of Fla., bordering on Ala., bounded E. by the Choctawhatchee river and S. by Choctawhatchee bay, and intersected by the Yellow Water river; area, 1,224 sq. m.; pop. in 1860, 3,037, of whom 441 were slaves. The surface is level, and the soil is fertile in the N. part and poor in the S. It is partly covered with forests of pine. The productions in 1850 were 28,920 bushels of Indian corn, 12,375 of sweet potatoes, 2,438 gallons of molasses, 8 hhds. of sugar, 60 bales of cotton, and 600 lbs. of rice. There were 3 churches, and 55 pupils attending schools. Capital, Uchee Anna.

WALTON, Brian, an English prelate and biblical scholar, born at Cleaveland, Yorkshire, in 1600, died in London, Nov. 29, 1661. After graduating at Cambridge, he became a curate and schoolmaster in Suffolk; was then an assistant at the church of Allhallows, London; was afterward successively rector of St. Martin's Orgar, London, St. Giles-in-the-Field, and Sandon in Essex; and before 1639 was prebendary of St. Paul's and chaplain to the king. Having taken an active part in the ecclesiastical disputes of the time, he was upon the triumph of the parliament in 1642 summoned before the bar of the house of commons and ordered into custody as a delinquent. He took refuge at Oxford, and there formed the plan of his famous polyglot Bible. Subscriptions to the work to the amount of £9,000 were made by May, 1653, and its publication was completed in 1657 (6 vols. fol., London). (See Polyglot.) Upon the restoration he was restored to his former preferments, and was consecrated bishop of Chester, Dec. 2, 1660. He left an *Introductio ad Lectionem Linguarum Orientalium* (London, 1654), and a Latin dissertation on the oriental languages and the various texts of Scripture (Deventer, 1658).

WALTON, George, a signer of the declaration of independence, born in Frederic co., Va., about 1740, died in Augusta, Ga., Feb. 2, 1804. He picked up an education while working as a carpenter's apprentice, and after he had served his time studied law in Georgia, where he commenced practice in 1774. He was one of four persons who in July of that year signed a call for a public meeting at Savannah to devise measures of resistance to the arbitrary proceedings of the crown; was appointed a delegate to congress in Feb. 1776, and reëlected in October of the same year, in Jan. 1777, Feb. 1778, and May, 1780. He was commissioned a colonel in the militia in Dec. 1778, was wounded at the taking of Savannah, and remained a prisoner until Sept. 1779. The next month he was appointed governor of the state. He was subsequently reëlected to the same office, was four times a judge of the superior courts of Georgia, and in 1795 succeeded Gen. James Jackson as senator in congress, serving one year.

WALTON, Izaak, an English author, born in Stafford, Aug. 9, 1593, died in Winchester, Dec. 15, 1683. Nothing is known of his life previous to the age of 20, when he appears, according to Anthony à Wood, to have followed the occupation of a sempster or haberdasher in a small shop in the royal burse in Cornhill. In 1624 he conducted his business in Fleet street, near Chancery lane; and in 1626 he was married to Rachel Floud, whose mother was a daughter of the grand-nephew of Archbishop Cranmer. Some years later he removed to Chancery lane, a few doors from Fleet street, where his wife died in 1640, after having borne him 3 children, all of whom died young. These afflictions weighed heavily upon him, and about 1643 he retired from business with a moderate competency, and during the remainder of his life, according to Wood, "lived mostly in the families of eminent clergymen of England, of whom he was much beloved;" although it is certain that he subsequently resided occasionally in London or its vicinity, where he held property on lease. About 1646 he was married a second time to Anne Ken, half sister of Bishop Ken, whom he also survived. Although the humble circumstances of Walton's youth probably precluded him from receiving any systematic education, he repaired his deficiencies by extensive reading; and his marriage connections, by bringing him into frequent intercourse with learned and pious men, gave strength to his literary tastes and religious opinions. While pursuing his business in London he became the admirer and intimate friend of Dr. Donne, whose death in 1631 he commemorated by an elegy, which seems to have been his first avowed literary effort; and at the request of Sir Henry Wotton he collected materials for a life of Donne, which Wotton proposed to write. The death of the latter in 1639 prevented the accomplishment of this design, and in the succeeding year Walton produced a life of Donne, published with an edition of his sermons. In 1651 he edited a collection of Wotton's remains, under the title of "Reliquiæ Wottonianæ," to which was prefixed a life of Wotton. His literary habits having become confirmed, and his literary reputation established by these and a number of minor miscellaneous publications, he produced in 1653 his "Complete Angler, or Contemplative Man's Recreation," a work long numbered among the choice classics of the language, and which, apart from its technical value, presents a pleasing picture of the author's cheerful and devout spirit, his innocent enthusiasm for the art of which he treats, his love of nature, and his poetic instincts. In this respect the work is essentially autobiographical in spirit and execution. Angling had been his favorite pastime when a resident of London, the Lea or perhaps the New river being the stream which he most frequented; and it is probable that after his retirement from business he pursued the sport with increased ardor and after more technical methods in the inland counties. The example of Wotton, who, he tells us in his preface, had intended "to write a discourse of the art and in praise of angling," probably influenced him on this as on a previous occasion to carry out the design of his friend; and he modestly adds that if Wotton "had lived to do it, then the unlearned angler had seen some better treatise of this art." However this may be, Walton lived to see his book go through 5 editions, the last of which, published in 1676, was accompanied by a second part, "being instructions how to angle for a trout or grayling in a clear stream," written by his intimate friend and adopted son Charles Cotton, with whom he had passed many pleasant hours angling in the Dove, which flowed past Beresford hall, Cotton's seat in Staffordshire, and who pays a beautiful tribute of affection and reverence to "his father Walton." Cotton's treatise is mainly devoted to fly fishing, and has ever since been printed with that of Walton, to which it forms a fit companion. Of the many editions of the "Complete Angler" since published, the most noticeable are those of Major (12mo., London, 1844), remarkable for its numerous admirable woodcuts and engravings, and of Sir Harris Nicolas (2 vols. imp. 8vo., London, 1836), which was 7 years in preparation, and which, beside being profusely illustrated, contains the best life of Walton yet written. An American edition published in 1847 contains an excellent bibliographical preface and other valuable matter by the Rev. Dr. Bethune. Walton's remaining works comprise lives of Richard Hooker (1665), George Herbert (1670), and Bishop Robert Sanderson (1678), all exquisitely simple in style, touching, and impressive; and in the year of his death he edited with an introduction John Chalkhill's "Thealma and Clearchus," sometimes erroneously attributed to himself. Several collective editions of his lives have been published. He died at the residence of his son-in-law, Dr. William Hawkins, a prebendary of Winchester cathedral, retaining to the last his cheerful temper and love for angling, and, as his will made a few months previous records, "in perfect memory, for which praised be God." He left a son, Izaak, who received a university education and took orders; but no descendants of his name are now known.

WALTZ (Ger. *walzen*, to roll), a dance of German origin, the music of which is written in $\frac{3}{4}$ or $\frac{3}{8}$ time, and which is executed by two persons placed directly opposite and almost embracing each other, who turn round on an axis of their own, while moving in a circle, the radius of which varies with the dimensions of the room. The waltz was once almost the only form of round dance in vogue, but of late years has been in a measure superseded by the polka, the mazurka, and other new dances.

WALWORTH, a S. S. E. co. of Wisconsin, bordering on Illinois, and drained by affluents of Pishtaka and Rock rivers; area, 576 sq. m.; pop. in 1860, 26,506. The surface is level and diversified with prairie and forest, and the soil highly fertile. Geneva lake, 8 m. long, is in the S. part, and there are a number of smaller lakes. The productions in 1850 were 655,704 bushels of wheat, 215,242 of Indian corn, 31,599 of barley, 378,059 of oats, 100,437 of potatoes, 333,012 lbs. of butter, 49,259 of wool, and 27,193 tons of hay. There were 10 grist mills, 12 saw mills, 22 churches, and 5,140 pupils attending public schools. The county is intersected by the Racine and Mississippi, the Kenosha, Rockford, and Rock Island, and the Fox River valley and Wisconsin central railroads. Capital, Elkhorn.

WALWORTH, Reuben Hyde, LL.D., an American jurist, born at Bozrah, Conn., Oct. 26, 1789. When he was 4 years of age his parents removed to Hoosick, N. Y., where he was brought up to the labors of a farm, and received only a common school education. At the age of 17 he commenced the study of law, and at 20 was admitted to practice in the county court, and two years later in the supreme court of the state. He settled at Plattsburg, and in 1811 was appointed master in chancery and one of the county judges. In the war of 1812 he was an officer of volunteers, and at the siege of Plattsburg in 1814 was acting adjutant-general of the U. S. forces. He was a member of congress from 1821 to 1833, and in the latter year was appointed one of the circuit judges of the state. In April, 1828, he was appointed chancellor, then the highest judicial office in the state, which he held for 20 years, until the abolition of the court of chancery in 1848, under the new constitution. Since he left the bench Mr. Walworth has confined himself to the business of a chamber counsel, and to the investigation of legal questions referred to him. His residence is at Saratoga Springs. His published decisions as chancellor are contained in 11 volumes of Paige's reports and 3 of Barbour's (1830–'49). Most of his opinions delivered in the court for the correction of errors, of which he was a member *ex officio*, were published in Wendell's reports (26 vols.), Hill's (7 vols.), and Denio's (5 vols.). Chancellor Walworth has long been identified with the leading religious and benevolent movements of the day; he was for many years president of the American temperance union, and is now (1862) vice-president of the American tract society and of the American Bible society, and one of the corporate members of the American board of commissioners for foreign missions.

WAMPUM, shells or strings of shells used by the North American Indians as money. In the language of the Massachusetts Indians the word signifies white, the color which generally prevailed in wampum belts. Beside their use as money, they were united to form a broad belt, which was worn as an ornament. It was called *wampumpaque*, *wampampeaque*, or *wampeaque*, and of these words wampum seems to be a contraction.

WANDERING JEW. See Jew.

WANDEROO. See Macaque.

WANIKA, a people of E. Africa, occupying together with the Suahili the region near the coast, from lat. 2° to 6° S. They are divided into 12 tribes, numbering in all about 50,000. They are dark-skinned, but of good forms, and, like the Wakamba, probably belong to the great Caffre family. They seem to be a simple, quiet people, peaceable and timorous, not truthful nor chaste, but, according to Dr. Krapf, who spent some years among them, honest though great beggars. They are indolent, and have made little progress in the arts; improvident and superstitious, but having no very distinct religion of their own beyond the belief in good and evil spirits. They have a form of fetich worship, and make sacrifices to their *muansa* or fetich, which is the trunk of a tree partly hollowed and covered with hides. Those who are in contact with the Mohammedans around Mombaz have imbibed some Mohammedan notions; and the Wadigo tribe, who are further S. and are the most numerous tribe of the Wanika, have acquired, probably from Hindoo merchants, the idea of transmigration. Deformed or feeble children are put to death. There is no paramount chief of the Wanika; each tribe has its own chief, who is liable to be deposed if he offends the people.

WAPELLO, a S. E. co. of Iowa, intersected by the Des Moines river; area, 432 sq. m.; pop. in 1860, 14,518. The surface is undulating and the soil highly fertile. The productions in 1859 were 17,575 bushels of wheat, 548,626 of Indian corn, 188,706 lbs. of butter, 36,936 of wool, 13,994 tons of hay, and 8,060 galls. of sorghum molasses. Bituminous coal and limestone are found. The county is intersected by the Keokuk, Fort Des Moines, and Minnesota, and the Burlington and Missouri railroads. Capital, Ottumwa.

WAPITI, a name given to the *cervus Canadensis* (Erxl.), a large American deer, the new world representative of the stag of Europe. It is 7 to 7½ feet in total length, and 4½ to 5 in height at the shoulders; the color in summer is reddish brown, with a yellowish white disk on the rump having a black streak on each side; in the male the hair of the throat is elongated, and black tipped with red; in winter the color is more grayish; the ears, middle of nape, and front of legs blackish. The tail is very short, the muzzle broad, and the suborbital openings large; hoofs short, wide, and rounded; ears shorter in proportion than in the Virginia deer, narrow, sharp-pointed, and hairy on both surfaces. The horns are much larger than those of the stag, round, erect, branching, ending in a fork, measuring 4 or 5 feet in their widest spread, and weighing from 20 to 30 lbs.; they are thickly covered with warty elevations arranged in longitudinal lines, with smooth, sharp, and whitish points, the general color being walnut brown; all the snags spring from the anterior surface, 2 arising from the very base, one immediately over the other, the points diverging about 8 inches; at the end of the 1st and 2d thirds respectively spring the 3d and 4th snags, and half way between the 4th and the tip of the 6th arises the 5th, the last two forming the terminal fork; there are sometimes 7 snags. They live in families of 6 or 7, in clumps of wood, feeding on grasses, young shoots of the willow and poplar, the fruit of the wild rose, &c.; they are usually shy, and make a harsh braying noise; the flesh is rather coarse. They are found from the Atlantic to the Pacific, in the northern states and in Canada, not going further N. than lat. 57°; they are most abundant on the upper Missouri and Yellowstone rivers, and have occasionally been found in the Alleghanies. The wapiti is hunted by the Indians for the skin, which retains its flexibility after having been wet. It is generally called here elk, a name properly belonging to the moose; it is also named red deer, stag, gray moose, and gray elk. It has been trained to go in harness. For an account of its habits, see Audubon and Bachman's "Quadrupeds of North America," vol. ii. p. 84.

WAPPERS, Gustave, baron, a Belgian painter, born in Antwerp in 1803. He received his earliest education at the academy of Brussels, and during a subsequent visit to Paris embraced with enthusiasm the principles of the new romantic school of painting. Returning to Belgium, he exhibited his "Scene from the Siege of Leyden by the Spaniards," which excited great admiration among the younger artists, and contributed to form the present national Belgian school. Among his finest works are the "Parting of Charles I. with his Children;" "Charles IX. on St. Bartholomew's Night;" "Anne Boleyn before Execution;" the noble altarpiece in St. Michael's church, Louvain; and the picture in the *palais de la nation* in Brussels, representing the commencement of the "September Days." At the request of Louis Philippe he painted the "Defence of Rhodes by the Knights of St. John" for the museum of Versailles, and his "Great Fishery of Antwerp" is in the possession of Queen Victoria. He is first painter to the king of the Belgians, by whom he was ennobled in 1849, and from 1846 to 1853 he was president of the academy of fine arts at Antwerp.

WAR. See Army, Artillery, Attack, Battle, Blockade, Cavalry, Fortification, Infantry, Martial Law, Navy, Prize, Privateer, &c.

WARBECK, Perkin, a pretender to the throne of England in the reign of Henry VII., born in London, hanged at Tyburn, Nov. 23, 1499. The common account is, that he was the son of a Jew of Tournay, doing business in London, who had dealings with Edward IV. and prevailed upon him to stand as godfather to his child. Afterward the boy went to Tournay, and subsequently to various other places; but there is no trace of his history until 1490, when he appeared at the court of Margaret, dowager duchess of Burgundy, and there impressed every one with his extraordinary resemblance to Edward IV.; and by some, indeed, it has been suspected that he was really the illegitimate son of that monarch. At this court he was taught to represent Richard, duke of York, younger brother of Edward V., generally supposed to have been murdered by his uncle Richard in the tower. In 1492, when there was prospect of a war between France and England, the pretender landed at Cork, and was joined by numerous partisans. At the invitation of Charles VIII. he repaired to the court of France, where he was acknowledged as duke of York, received a pension, and was attended by a body guard. At the peace of Estaples he was dismissed from France and went to Flanders, where after an affected distrust he was received by the duchess of Burgundy as her nephew. The belief in the truth of his claim was not only shared by the populace of England, but by certain of the nobility, and some of them openly declared for him. Henry VII. by means of spies obtained the history of the life of Warbeck and had it published, and likewise put to death or otherwise punished a large number of the domestic conspirators. Warbeck, finding his cause losing ground, in 1495 made an incursion upon the coast of Kent with 600 men, but was repulsed, retired to Flanders, soon made another unsuccessful attempt upon Ireland, and then repaired to Scotland, where he was acknowledged by James IV. and received in marriage Lady Catharine Gordon, daughter of the earl of Huntley. He accompanied the Scottish monarch in an inroad upon the northern counties of England; but in consequence of a treaty then negotiating between the two countries, he retired to Ireland, and from there went to Cornwall. As soon as he appeared at Bodmin, he was joined by 3,000 of the inhabitants and began the siege of Exeter, taking on himself for the first time the title of Richard IV., king of England. The march of an army to the relief of the place forced him to retire to Taunton, where, although at the head of 7,000 men, he gave up all hope of success, and took refuge in the sanctuary of Beaulieu in the New forest. He was taken prisoner, and on the promise of pardon made a confession of his life and adventures; but being kept in custody, he broke from it and fled to the sanctuary of Sheene. On being again taken, he was placed in the stocks at Westminster and Cheapside, and forced to read aloud to the people his previous confession, and was then confined to the tower. There he opened a correspondence with the earl of Warwick, who was also in prison, and formed a project for the escape of both. The scheme was discovered, and Warbeck was accordingly arraigned, tried, and executed. Rey, in his *Essais historiques et critiques sur Richard III.* (Paris, 1818), takes the ground that he was the son and lawful heir of Edward IV.

WARBLER, the common name of the dentirostral birds of the family *luscinidæ* or *sylvicolidæ*, including many sub-families and a great number of species. They are characterized by a bill of moderate length, slender, broad at the base and tapering to the end; wings long, and tarsi long and slender; they are very sprightly birds, of small size, many being exquisite singers, and some having a beautiful plumage. They are spread over all the habitable globe, and perform a very important part in the economy of nature in keeping down the number of minute insects which inhabit flowers, fruit, and foliage, and which but for these birds would be very injurious to vegetation. In this family, according to Gray, belong the wagtails (*motacillinæ*), the titmice (*parinæ*), the *erythacinæ* (like the blue bird, and the old world robin, pratincole, and redstart), the *malurinæ* or soft-tailed warblers of the East Indies and Australia, and the *sylvinæ* or *luscininæ*, the typical warblers. The last seek for insects on trees and shrubs, eating also fruits and seeds; the nest is generally cup-shaped and neatly made, the eggs 5 to 8, and the broods 2 in a season. This sub-family contains the nightingale, the kinglets, and the old world warblers like the black-capped *sylvia*. (See BLACKCAP.) It would be impossible in an article like this to give any idea of the plumage of the 40 warblers of North America, placed by Baird in the sub-family *sylvicolinæ;* the names of some of the most common are: the prothonotary, mourning, blue-winged yellow, golden-winged, orange-crowned, black-throated green, gray and blue (3), yellow-rumped, Blackburnian or hemlock, bay-breasted, pine-creeping, chestnut-sided, blue, black poll, black and yellow, and prairie warbler, most of which are sufficiently described by their names; the prevailing colors are yellowish and olive green, varied with black and blue. For descriptions see Audubon's "Ornithological Biography," and vol. ix. of the Pacific railroad reports, pp. 237–290.

WARBURTON, ELIOT BARTHOLOMEW GEORGE, a British author, born in Aughrim, county Galway, in 1810, lost in the steamer Amazon, burned off the Land's End, Jan. 4, 1852. He was educated at Queen's and Trinity colleges, Cambridge, and was subsequently called to the bar, but soon gave up practice and devoted himself to the improvement of his estates in Ireland. In 1845 he appeared for the first time as an author by a book of travels in the East entitled "The Crescent and the Cross," which in 1859 had reached its 15th edition. His other works are: "Prince Rupert and the Cavaliers," designed to vindicate the reputation of that chieftain (1849); "Reginald Hastings," a romance of the same period; "Hochelaga;" and "Darien, or the Merchant Prince," a story published after his death, founded on the history of the Darien colony. He also edited "Memoirs of Horace Walpole and his Contemporaries." He was lost while on a voyage to America.

WARBURTON, WILLIAM, an English prelate, born in Newark, Nottinghamshire, Dec.

24, 1698, died in Gloucester, June 7, 1779. He was the son of an attorney, was educated for the same profession, and commenced business for himself at Newark in 1719; but the occupation being little to his taste, he abandoned it for the church, and in 1723 received deacon's orders from the archbishop of York. About the same time he published "Miscellaneous Translations, in Prose and Verse, from Roman Poets, Orators, and Historians" (12mo.). In 1726 he was ordained a priest, and was presented by Sir Robert Sutton, to whom he had dedicated his book, to the small vicarage of Gryesley, Nottinghamshire. In the same year he went to London, and formed a friendship with Theobald, to whose edition of Shakespeare he contributed some notes; he also allied himself with the confederacy against Pope, and wrote a letter to Concanen, in which he said that while Milton borrowed from affectation and Dryden from idleness, Pope borrowed from necessity. This was published in 1766, much to his annoyance, by Akenside, into whose hands it had accidentally fallen. Meanwhile he published his "Critical and Philosophical Inquiry into the Causes of Prodigies and Miracles" (12mo., 1727), and a treatise entitled "The Legal Judicature in Chancery stated" (1727), his only legal work. In 1728, when George II. visited the university of Cambridge, he was placed upon the king's list of masters of arts, and the same year was presented by his former patron to the rectory of Brant Broughton in Lincolnshire, worth about £200 a year, where he spent the most of his life. In 1736 appeared the work which laid the foundation of his reputation, "The Alliance between Church and State, or the Necessity and Equity of an Established Religion and a Test Law demonstrated from the Essence and End of Civil Society, upon the Fundamental Principles of the Law of Nature and Nations." This was followed in 1738 by the first volume of "The Divine Legation of Moses demonstrated on the Principles of a Religious Deist, from the Omission of the Doctrine of a Future State of Rewards and Punishments in the Jewish Dispensation." This work, which embraced an entirely new argument in defence of the divine origin of the laws of Moses, was assailed so bitterly that Warburton complained that he could not have been more abused had he written a book to maintain the divine legation of Mohammed. Shortly after the publication of the first volume, he was appointed chaplain to the prince of Wales. In 1739-'40 he published, in a periodical called "The Works of the Learned," 5 letters under the title of "A Vindication of Pope's Essay on Man." These were in answer to M. de Crousaz, who had accused the poet of a tendency to Spinozism and naturalism. Pope, gratified by the defence of this voluntary champion, made his acquaintance, and a firm friendship was formed between them, which was of great advantage to Warburton, to whose opinions indeed the poet paid a deference almost amounting to servility. In 1742 Warburton wrote a "Dissertation on the Origin of Books of Chivalry," which was published at the end of the preface to Jarvis's translation of "Don Quixote." In a letter to the author Pope made the following remark: "I had not read two clauses before I cried out, *Aut Erasmus, aut diabolus.* I knew you as certainly as the ancients did the gods, by the first pace and the very gait." In 1741 Warburton had published the second volume of the "Divine Legation of Moses," and the year following "A Critical and Philosophical Commentary on Mr. Pope's Essay on Man;" and at this time he advised the poet to make Colley Cibber the hero of the "Dunciad" instead of Theobald, and to add a 4th book. Both were accordingly done, and in 1743 the poem appeared with notes by Warburton. When Pope died in 1744, he bequeathed to his friend one half of his library, the right to all such of his works as he had not otherwise disposed of, and all the profits which should arise from any edition to be printed after his death. In 1744 Warburton published a defence of his "Divine Legation" in a treatise entitled "Remarks on several occasional Reflections," which was followed in 1745 by "Remarks on several occasional Reflections, in answer to the Reverend Doctors Stebbing and Sykes." These answers were marked by an arrogance of manner and a tone of confident superiority which distinguished all his subsequent controversial writings. In 1746 he was elected preacher of Lincoln's Inn, and in 1747 published his edition of Shakespeare (8 vols. 8vo.). Bolingbroke, in the preface to his "Patriot King" (1749), made an attack upon the moral character of Pope, charging him with having printed copies of that work some years before without authority. Warburton published a rejoinder in vindication of his friend. To this a reply soon afterward appeared in "A Familiar Epistle to the most Impudent Man living." About this time a controversy arose between Warburton and Middleton, which was carried on in a manner not very creditable to the character of either; but growing out of it was a masterly treatise entitled "Julian, or a Discourse concerning the Earthquake and Fiery Eruptions which defeated the Emperor's Attempt to rebuild the Temple at Jerusalem" (1750). The following year he published an edition of Pope's works in 9 vols. 8vo., and in 1752-'4 two volumes of sermons preached at Lincoln's Inn. Upon the publication of Bolingbroke's philosophy, he wrote an answer to it in four letters to a friend (1754-'5). In 1754 he was made one of the king's chaplains in ordinary, in 1755 prebendary of Durham, in 1757 dean of Bristol, and on Dec. 22, 1759, bishop of Gloucester. Beside a large number of occasional sermons, tracts, and controversial treatises, Warburton wrote a work against Methodism under the title of "The Doctrine of Grace, or the Office and Operations of the Holy Spirit vindicated from the Insults of Infidelity and the Abuses of Fanaticism" (2 vols. 12mo., 1762). In an appendix to the edition of the second part of the "Divine Legation" published in 1765, he made reflections upon the father of Dr. Lowth, which involved him in a controversy with that clergyman. During his last years his mental faculties became impaired. His friend Bishop Hurd published an edition of his works (7 vols. 4to., 1788), and in 1794 an account of his life, character, and writings. In 1809 appeared a volume of letters addressed to Hurd under the title of "Letters of Warburton to one of his Friends;" and in 1841 an addition was made to his published writings by a work entitled "Literary Remains of Bishop Warburton." In 1789 Dr. Parr, from unfriendly motives, also published a volume of "Tracts by Warburton and a Warburtonian [Bishop Hurd], not admitted into the respective Collections of their Works."

WARD, Artemas, an American general in the revolutionary war, born in Shrewsbury, Mass., in 1727, died there, Oct. 28, 1800. He was graduated at Harvard college in 1748, and for several years was successively a representative in the colonial legislature and a member of the council, and was also justice of the court of common pleas in Worcester county. In the French and Indian war he served as lieutenant-colonel under Abercrombie, and in 1774 was one of the delegates to the provincial congress. At the breaking out of the revolutionary war he was appointed a major-general of militia, and was in command of the army which began the siege of Boston. On the election of Washington as commander-in-chief by the continental congress, Ward was made second in command, and when the former arrived at Cambridge was assigned to the command of the right wing stationed on Roxbury heights. In April, 1776, a month after the surrender of Boston, he resigned his commission, but at the request of Washington continued to act until the end of May. He was a member of congress in 1780-'81, and again from 1791 to 1795.

WARD, Edward Matthew, an English painter, born in London in 1816. In 1834 he became a student at the royal academy, and in the same year he exhibited his first picture at the gallery of the society of British artists. After several years' study in Italy he returned to London, and for some time devoted himself to historical subjects. To the cartoon competition at Westminster hall in 1843, he contributed a composition of heroic size, entitled "Boadicea," which attracted little notice; but his "Dr. Johnson perusing the Manuscript of the Vicar of Wakefield," produced soon after, elicited universal praise, and he soon took his place among the most popular contemporary painters of history, and of that combination of history and *genre* illustrated by such subjects as his "South Sea Bubble" and "Scene in Lord Chesterfield's Ante-Room," or his "Ante-Room at Whitehall during the Dying Moments of Charles II.," exhibited in 1861. His best historical pieces are his "Royal Family of France in the Prison of the Temple," and "Last Sleep of Argyle," the latter painted for the new palace at Westminster. He was elected an associate of the royal academy in 1847, and an academician in 1855.

WARD, James, an English painter, born in London in Oct. 1770, died Nov. 16, 1859. He was instructed in engraving by an elder brother, but from choice devoted himself to painting, and became so exact an imitator of Morland, that the picture dealers did a lucrative business in buying his works at a cheap rate and selling them at a considerable advance as original Morlands. His horses and cattle were perhaps not inferior to Morland's. He was however for a long time compelled to use the graver as a means of support; and when his circumstances enabled him to resume his favorite art, instead of reproducing those scenes of rustic and animal life in which he had shown so much early promise, he attempted history, allegory, and other subjects foreign to his tastes and capacity. He was in a measure led to this class of subjects by becoming the successful competitor for a premium of £1,000, offered for a design illustrative of the battle of Waterloo; and he subsequently executed for Chelsea hospital a huge allegorical picture on the same subject, which was so unmercifully ridiculed that it was thrust aside for ever. He was elected associate of the royal academy in 1807 and academician in 1811, and painted with undiminished zeal until after his 80th year.

WARD, Nathaniel, an English clergyman, born in Haverhill about 1570, died in Shenfield, Essex, in 1653. He was the son of a Puritan clergyman, was educated at Emmanuel college, Cambridge, and for some time practised law, but subsequently turned his attention to theology. In 1626 he became preacher at St. James's, Duke's place, London, and afterward rector of Standon Massye in Essex. In consequence of adhering to nonconformist principles, he was suspended by Archbishop Laud in 1633. In April, 1634, he sailed for New England, and was soon settled in Agawam or Ipswich as pastor. In Feb. 1637, he resigned his charge on account of impaired health, and in 1638 was made by the general court one of a committee to draw up a code of laws for the consideration of the freemen. In May, 1640, he with several others formed the settlement of Haverhill, and in May, 1645, was selected by the people of Essex to act on a committee to draw up laws to be submitted to the next legislature. Toward the end of that year he returned to England, became pastor of Shenfield, and as minister of the place was a subscriber to the "Essex Testimony." In 1647 he published "The Simple Cobbler of Agawam," and subsequently a satire against the London preachers entitled "Mercurius Antimecharius, or the Simple Cobbler's Boy, with his Lap full of Caveats."

WARD, Robert Plumer, an English author and publicist, born at Gibraltar, March 19, 1765, died at Okeover hall, Aug. 13, 1846. He was educated at Christchurch, Oxford, and in 1790 was admitted to the bar at the Inner Temple. In 1805 he was appointed by Pitt one of the Welsh judges, shortly afterward became under secretary of state for foreign affairs, from 1807 to 1811 was a lord of the admiralty, in 1811 became clerk of the ordnance, and in 1823 was made one of the auditors of the civil list. In 1832 he served as high sheriff of the county of Herts, and for a long time was a member of parliament. He wrote a "History of the Law of Nations in Europe from the Time of the Greeks and Romans to the Age of Grotius" (1795); "An Inquiry into the Conduct of European Wars" (1803); "Tremaine," a novel (1825); "De Vere," a novel (1827); "Illustrations of Human Life" (1837); "Pictures of the World" (1838); "Historical Essay on the Revolution of 1688" (2 vols. 8vo., 1838); and "De Clifford," a novel (1841). From 1809 until late in life, Mr. Ward kept a diary relating to political affairs, which has been published down to 1820 in the "Memoirs of the Political and Literary Life of Robert Plumer Ward, Esq." (2 vols. 8vo., 1850). The later portion has been withheld from publication on account of its severe strictures upon living men.

WARD, Seth, an English divine and mathematician, born in Buntingford, Hertfordshire, in 1618, died in Knightsbridge, Jan. 6, 1689. He was educated at Sidney Sussex college, Cambridge, of which he became a fellow. When the civil war broke out he published in connection with others a treatise against the "Solemn League and Covenant," and in consequence was deprived of his fellowship; but in 1649 he was appointed Savilian professor of astronomy in Oxford, in 1659 principal of Jesus college, and afterward president of Trinity, but resigned at the restoration. In 1660 he was presented to the rectory of St. Lawrence, Old Jewry, and in 1661 was made dean and in 1662 bishop of Exeter. In 1669 he was translated to the see of Salisbury, and in 1671 was made chancellor of the order of the garter, which office through his representations was restored and for ever annexed to the see. He published some theological works and sermons, but his astronomical and mathematical works have given him greater reputation, and comprise a treatise *De Cometis* (4to., Oxford, 1653); *Idea Trigonometriæ Demonstratæ* (1654); and *Astronomia Geometrica* (8vo., London, 1656). He also left a work on the philosophy of Hobbes (1656). Bishop Ward was the founder of several charitable institutions, but his severity toward the nonconformists has sullied his reputation.

WARD, William, an English missionary and author, born in Derby, Oct. 20, 1769, died in Serampore, Hindostan, March 7, 1823. After serving an apprenticeship to a printer, he studied for the ministry, and in 1798 offered himself to the Baptist missionary society as a missionary and printer. In May, 1799, he sailed for Calcutta, but was compelled by the opposition of the East India company to settle at Serampore. He at once applied himself to the language, and to the printing of Dr. Carey's translations. In 1800 he printed the Bengalee New Testament, and afterward several other translations, while earnestly engaged also in missionary labors. In 1819 he returned to England on account of impaired health, visited Holland and America, and went to Calcutta in 1821. He published "An Account of the Writings, Religion, and Manners of the Hindoos" (4 vols. 4to., Serampore, 1811), reprinted in England and the United States; "Biographical Accounts of Four Converted Hindoos" (Serampore, 1814); "A Sketch of Rev. Andrew Fuller;" "Farewell Letters to Friends in America" (1821); "Memoir of Kushnapul, a converted Hindoo" (Serampore, 1822); "Short Meditations on Various Passages of Scripture" (2 vols. 12mo., Serampore, 1822); and a number of sermons.

WARDLAW, Ralph, D.D., a Scottish clergyman and author, born in Dalkeith, Mid-Lothian, Dec. 22, 1779, died in Glasgow, Dec. 17, 1853. He entered the university of Glasgow at the age of 12, and from 1795 till 1800 attended the divinity hall of the Secession church at Selkirk. He then decided to join the Scottish Independents, a denomination then organizing under the Haldanes, Aikman, and Ewing, and in 1803 took charge of a congregation in Glasgow, where he remained till his death; and in 1811 he was elected professor of systematic theology in the theological academy of the Independents in that city. In 1818 he received the degree of D.D. from Yale college. In 1853 the completion of the 50th year of his ministry was celebrated by a public meeting, in connection with which a large sum of money was collected and expended in erecting the "Wardlaw Jubilee School and Mission House" at Dove hill, a destitute part of the city. In 1833 Dr. Wardlaw delivered a course of 8 lectures in London in defence of Congregationalism, and in 1839 another course of the same number in reply to Dr. Chalmers's lectures on church establishments. His published works are very numerous. The most important are: "Lectures on Romans iv. 9-25," a defence of infant baptism (1807); "Discourses on the Socinian Controversy" (1814); "Unitarianism incapable of Vindication" (1816); "Expository Lectures on the Book of Ecclesiastes" (2 vols. 8vo., 1821); "A Dissertation on the Scriptural Authority, Nature, and Uses of Baptism" (1825); "The Dissuasion to the Young against the Enticements of Sinners" (1825); "Man Responsible for his Belief" (1825); "Discourses on Prayer" (1829); "Essays on Assurance and Pardon" (1830); "Essays on Faith and Atonement" (1831); "Discourses on the Sabbath" (1832); "Lectures on Christian Ethics" (1833); "A Treatise on Miracles" (1852); and "Lectures on Systematic Theology" (3 vols. 8vo.), published after his death.—See "Memoir of the Life and Writings of Ralph Wardlaw, D.D.," by W. L. Alexander, D.D.

WARE, Bed of. See Bed and Bedstead.

WARE, a S. E. co. of Georgia, bordering on Florida, bounded N. E. by the Little Satilla river, and intersected by the Satilla river, and also drained by its numerous tributaries; area, 1,720 sq. m.; pop. in 1850, 3,888; in 1860, 2,200, of whom 377 were slaves. The surface is level and in many parts swampy. Okefinokee swamp, in the S. part, extending into Florida, is 30 m. long and 17 m. wide. The soil is generally fertile. The productions in 1850 were 68,270 bushels of Indian corn, 44,522 of sweet potatoes, 40,825 lbs. of rice, and 394 bales of cotton. Oranges and figs are produced in considerable quantities. There were 15 churches, and 95 pupils attending public schools. The county is intersected by the Savannah, Albany, and Gulf railroad. Capital, Waresborough.

WARE. I. Henry, D.D., an American clergyman, born in Sherburne, Mass., April 1, 1764, died in Cambridge, Mass., July 12, 1845. He was graduated at Harvard college in 1785, and remained in Cambridge, engaged in the study of theology, at the same time teaching the grammar school of the town, until October of that year, when he was ordained at Hingham, Mass. In 1805 he was elected Hollis professor of divinity at Harvard college. His election was the subject of exciting discussions on account of the liberality of his theological views, and was the signal for the development of causes which eventually divided the old Congregational ecclesiastical system of New England, and established a new denomination. A protracted controversy at length arose out of it, Dr. Ware and Dr. Woods being among the principal champions of the two sides respectively, the result defining the lines that now separate the Unitarians, to whom Dr. Ware adhered, from the orthodox Congregationalists. He held the office of professor in the college, and in the theological school which at a later day was established in connection with it, for 35 years, resigning it in 1840 in consequence of the loss of his eyesight. In 1820 he published a volume entitled "Letters to Trinitarians and Calvinists," occasioned by Dr. Woods's "Letters to Unitarians;" and in 1821 his "Answer to Dr. Woods's Reply," with a "Postscript" in 1822. After his retirement from his professorship, he also published some of his academical lectures under the title, "An Inquiry into the Foundation, Evidences, and Truths of Religion" (2 vols., Cambridge, 1842). II. Henry, jr., D.D., an American clergyman, eldest son of the preceding, born in Hingham, Mass., April 21, 1794, died in Framingham, Mass., Sept. 25, 1843. He was graduated at Harvard college in 1812, spent two years as an assistant teacher at Phillips Exeter academy, at the same time prosecuting his theological studies, which he completed at Cambridge under the direction of his father, and was ordained minister of the second church in Boston, Jan. 1, 1817. He became the editor of the "Christian Disciple," an organ of the Unitarian denomination, which a few years later took its present title of the "Christian Examiner." In 1828, in consequence of his ill health, his parish elected Mr. Ralph Waldo Emerson as his colleague; and in 1829, having received the appointment of professor of "pulpit eloquence and the pastoral care" in the theological school at Cambridge, he took leave of his parish, and passed a year in Europe, after which he entered upon his new duties. In July, 1842, he resigned his professorship and removed to Framingham. In 1824 he delivered a poem entitled "A Vision of Liberty," before the Phi Beta Kappa society at Cambridge. He published many discourses and essays, contributing often to the religious and literary periodicals of the time. A "Memoir" of his life by his brother John (Boston, 1846) contains a catalogue of his published works, which have since his death been printed in 4 volumes (Boston, 1847). III. John, M.D., an American physician and author, brother of the preceding, born in Hingham, Mass., Dec. 19, 1795. He was graduated at Harvard college in 1813, received the degree of M.D. in 1816, commenced the practice of his profession in Duxbury, Mass., and in 1817 removed to Boston, where he still resides. In 1832 he was appointed professor of the theory and practice of medicine in the medical department of Harvard college, which office he held till 1858. He has published various medical lectures and discourses, essays on "Croup," on "Delirium Tremens," and on "Hæmoptysis," a volume on the "Philosophy of Natural History," and a "Memoir of H. Ware, Jr." (Boston, 1846). IV. William, an American clergyman and author, brother of the preceding, born in Hingham, Mass., Aug. 3, 1797, died in Cambridge, Mass., Feb. 19, 1852. He was graduated at Harvard college in 1816, devoted 4 years to the study of theology, and in 1821 was ordained over the first Congregational church in New York. In 1836 he resigned his charge, and removed to Brookline, near Boston. He had previously commenced in the "Knickerbocker Magazine" the publication of the "Letters from Palmyra," which were published in 2 vols. in 1837, and are now better known under the present title of "Zenobia." A sequel to this work, now known as "Aurelian," was published in 1838, under the name of "Probus." In June, 1837, he was settled over the second Congregational church in Waltham, Mass., and remained there till April, 1838, when the society was united to the older parish in the place. After a short residence in Jamaica Plain, he removed to Cambridge in 1839, and for several years was editor of the "Christian Examiner." In 1841 he published "Julian" (2 vols.), and in 1844 was settled over the Unitarian society in West Cambridge. Ill health soon obliged him to give up preaching, and he returned to Cambridge. In 1848 he travelled in Europe for a year, publishing after his return a volume of travels called "Sketches of European Capitals" (Boston, 1851). He was passionately fond of art, and after his death a volume was published of "Lectures on the Works and Genius of Washington Allston." He was a frequent contributor to the "Christian Examiner" and other periodicals of the Unitarian denomination. His historical romances have passed through many editions both at home and in England and Germany, and have attained a high reputation as illustrating the manners of the times in which their scenes are laid. They have been characterized as "admirable specimens of the classical novel, breathing the genuine spirit of antiquity, and remarkable for their glowing and picturesque descriptions."

WAREHOUSEMAN, in law, one who receives goods of any kind for the mere purpose of storage. He is a bailee, and, his contract with the owner being one for their mutual benefit, is held only to ordinary care and diligence; and if loss or injury happen to the goods, he is not responsible without the absence of this care or diligence on his part, unless he expressly assumes a greater responsibility. There is nothing, however, to prevent warehousemen receiving goods on whatever terms or contract they see fit to make with the owner. Persons may become warehousemen, and subject only to the law of that relation, whose general position is quite different. Forwarding merchants in the United States are generally regarded as warehousemen, unless they take upon themselves the duty and the responsibility of common carriers, which they do when they begin to act in that character. On the other hand, common carriers, as railroad companies or expressmen, lie only under the less responsibility of warehousemen when they cease to be carriers of the goods they have transported, or have not yet begun to carry those they have taken for future transport. It is sometimes difficult to draw the line in particular cases, and say whether a person or company is liable without fault because the goods were then in his or its possession as carrier, or liable only for fault because the transit had not begun, or had terminated. The general principle is quite certain, although the authorities are far from uniform in their application of it. Perhaps it is safe to say, that if the carrier receives them to carry at once or as soon as he can, he holds them as carrier; if he is to keep them until a distant period of transit, until then he is only a warehouseman. If the actual transit have ceased, some courts hold that his liability ceases at once; and it undoubtedly does so when, after he is ready to deliver them, they are left on his hands and he awaits the call of the owner or consignee. A warehouseman has a lien on goods in his care for the storage of them. He may deliver a part and retain his lien on the residue for all his charge for all the goods, if all were delivered to him as one bailment. But he has no general lien on any goods for all demands against the owner, or for the storage of other goods.

WARHAM, William, an English prelate, born at Okeley in Hampshire, died at St. Stephen's, near Canterbury, Aug. 23, 1532. He was educated at Winchester school and at New college, Oxford, and in 1488 was appointed to a living by the bishop of Ely. Afterward he was an advocate in the court of arches, and held the office of principal of the civil law school in St. Edward's parish, Oxford. In 1493 he was sent with Sir Edward Poynings by Henry VII. to the court of Burgundy, in order to bring to an end the encouragement given by the dowager duchess Margaret to the claims of Perkin Warbeck to the English throne. The same year he was made master of the rolls, in 1502 keeper of the great seal, and on Jan. 1, 1503, lord high chancellor. He was also made bishop of London, and in 1504 archbishop of Canterbury; and in 1506 he was elected chancellor of the university of Oxford. He held the chancellorship of England during the first years of the reign of Henry VIII., but was in constant rivalry with Wolsey, to whom in 1516 he relinquished the post. He lived to see the fall of his rival, and in 1529 the chancellorship was again offered him, but in consequence of his advanced age he declined the distinction. In his latter years he countenanced to some extent the pretended supernatural revelations of Elizabeth Barton of Aldington, commonly called the holy maid of Kent.

WARING, Edward, an English mathematician, born at Mitton, near Shrewsbury, in 1736, died Aug. 15, 1798. He was educated at Magdalen college, Cambridge, where in 1759 he was elected Lucasian professor of mathematics, and, as he had not taken the required degrees, received a special license from the crown to hold the appointment. In 1763 he was elected a fellow of the royal society. He took the degree of doctor of medicine in 1767, but never practised much. He published *Miscellanea Analytica de Æquationibus Algebraicis et Curvarum Proprietatibus* (4to., 1762); *Meditationes Algebraicæ* (1770); *Proprietates Algebraicarum Curvarum* (1772); and *Meditationes Analyticæ* (1776). In 1794 he printed at Cambridge an "Essay on the Principles of Human Knowledge," but the work was never published.

WARM SPRINGS, or Bath Court House, a post village and the capital of Bath co., Va., noted for its thermal springs, 170 m. W. N. W. from Richmond. The county contains numerous medicinal springs, known as Warm, Hot, Healing, and Alum Springs. The Warm Springs are those most frequented by invalids, as well from their mild and uniform temperature as from the fine scenery of the surrounding country. They are situated in a narrow valley between two mountain ridges. The largest spring is 40 feet in diameter, and its temperature is 98° F. winter and summer. The water holds in solution muriate, sulphate, and carbonate of lime, and sulphate of magnesia. There are a number of large buildings for the accommodation of visitors.

WARMING AND VENTILATION. The principles upon which these arts depend are so mutually involved, that it is impracticable to consider them separately. Apartments lose their heat at a rate proportional to the excess of their temperature above the outward atmosphere. Large quantities escape through too thin glass windows. Glass, though a bad conductor, is so excellent an absorbent and radiator, and the plates used are so thin, that it opposes but a slight barrier to the heat, permitting it to escape almost as readily as plates of iron of equal thickness. Three fourths of the heat which escapes through the glass would be saved by double windows, whether of two sashes, or of double panes, only half an inch apart, in the same sash. Heat also escapes through walls, floors, and ceilings, at a rate proportional to the conducting power of the materials of which they are composed. Much heat is conveyed away by the currents necessary to maintain combustion; much is lost by leakage of warm air through various fissures and openings, and, where ventilation is attended to, by the outflowing currents of vitiated air. To renew the heat thus rapidly lost is the object of the various devices for warming. At first, heating contrivances consisted only of open wood fires, or braziers filled with charcoal, the smoke and offensive fumes of which were often masked by the burning of spices. The first capital step of improvement in this direction consisted in the invention of chimneys about the 13th century. (See CHIMNEY.) From that time arrangements for warming have been slowly multiplied, and improved with the advance of civilization.—The necessity of ventilation results from the very nature of the respiratory process; for if that be interrupted but for a few moments in the higher animals, death is the consequence. The rate of change in animals depends upon the respiratory apparatus, and its perfection determines their activity and power. Oxygen of the air, with its wide range of intense attractions, flows incessantly through the lungs into the blood, and is borne on to all parts of the body, muscles and brain being maintained in a state of functional activity by the arterialized stream. The brain, weighing but $\frac{1}{36}$ of the whole body, receives from $\frac{1}{5}$ to $\frac{1}{10}$ of all the blood sent from the heart. A torrent of oxygen is thus poured incessantly into the material apparatus of thought to carry forward those physiological changes upon which thinking depends. If the arterial current be cut off from a muscle, it is paralyzed; if from the brain, unconsciousness instantaneously occurs. In proportion to the exercise of a muscle is its demand for oxygen; in proportion to the activity of the mind is the brainward flow of arterial blood. If air be rarefied, or deficient in oxygen, its respiration depresses all the powers of the constitution, physical and mental. If the natural amount is increased, there is augmented activity of all the bodily functions. Pure oxygen, if respired quickly, kills by over-action. The life processes are thus graduated to the constitution of the atmosphere, and the healthfulness of the former depends upon the constancy of the latter. In close inhabited apartments various causes conspire to deteriorate the air. Not only is there loss of oxygen by respiration, but its place is supplied by an equivalent volume of the narcotic poison, carbonic acid gas. In the general atmosphere this element, though constant, is not suffered to rise higher than the $\frac{1}{2000}$ part, a proportion which we may assume to be inoffensive; but when it is increased 20 fold, that is to 1 per cent., the air becomes soporific, depressing, and altogether injurious. From 5 to 8 per cent. of carbonic acid in the air renders it dangerous to breathe, and from 10 to 12 per cent. makes it speedily destructive to life. The average amount of air respired per day is stated by Vierordt to be 306 cubic feet, and by Valentin 398 cubic feet, 7 per cent. of the entire air, or 35 per cent. of its oxygen, being absorbed at each breath. A person robs of all its oxygen nearly 4 cubic feet of air per hour, and diminishes its natural quantity 5 per cent. in 80 cubic feet per hour. The quantity of carbonic acid in the expired breath is 100 times greater than in the natural atmosphere. A person by breathing adds 1 per cent. of carbonic acid to 55½ cubic feet in an hour, or would vitiate to this extent nearly a cubic foot per minute. Open combustion in a room contaminates the air in the same way. A pound of mineral coal requires 120 cubic feet of air to burn it, although if the combustion is properly conducted the contaminated air is steadily withdrawn. But this is not the case in illumination, as the products of combustion are here accumulated within the room. A candle (6 to the pound) will consume $\frac{1}{8}$ of the oxygen from 10 cubic feet of air per hour; while an oil lamp, with large burner, will change in the same way 70 cubic feet per hour. A cubic foot of coal gas consumes from 2 to 2½ cubic feet of oxygen, and produces from 1 to 2 cubic feet of carbonic acid. Thus every cubic foot of gas burned imparts to the atmosphere 1 cubic foot of carbonic acid, and charges 100 cubic feet of it with 1 per cent. of this noxious gas. Beside these sources of impurity, subtile streams of effete organic matter are constantly exhaling into the air from the lungs and skin of every living animal. The current escaping from the ventilator of a crowded room has an insufferably nauseous odor, and if passed through pure water quickly renders it putrescent. Thus, morbid, organic poisons, so subtile and minute as to elude chemical detection, may be engendered in the confined air of over-crowded rooms, and become the germs of fever, the seeds of pestilence. Another and a frequent cause of deterioration of the air in close apartments, is the withdrawal of its moisture by heating. While the other ingredients of the atmosphere are constant, its moisture depends upon temperature. At zero a cubic foot of air will hold .18 grain of watery vapor; at 32° it will contain 2.35 grs.; at 50°, 4.24; at 100°, 19.12; and as the temperature goes still higher, the capacity for moisture rapidly increases. When air is saturated at a given temperature, it will receive no more moisture unless the heat be increased; while if its temperature falls, a portion of its water is precipitated. (See DEW.) In the open atmosphere, where the air is in contact with the moist earth, evaporation and precipitation take place with the rising and falling temperature, but usually within normal or healthy limits. But if air is heated without the requisite addition of moisture, its constitution is disturbed, and it becomes injurious. Air saturated with moisture at the freezing point, and then heated in a room to 100°, has but ⅛ its necessary quantity of moisture, and the deficiency represents its drying or parching influence upon the lungs and skin. This is one of the chief causes of the ill effects of stove and furnace-heated air. So direct is the access which respiration affords to the innermost recesses of the body, and so immediately dependent upon it is the whole circle of organic processes, that any serious disturbance of the air, any mingling with it of deleterious ingredients, cannot fail to be most injurious. From tainted air follows tainted blood. Oxygen, the consumer of effete matter and purifier of the system, is withheld, and, the carbonic acid already in the air offering a barrier to its exhalation from the lungs, the vital current is encumbered with the noxious products of bodily waste. Under these circumstances it is supposed the blood may acquire a fermentable state, forming a ready prepared soil for the seeds of infection. Atmospheric malaria may be powerless upon a perfectly healthy system, while it would find ready lodgment in a constitution which bad air, by lowering the tone and depressing the vital powers, had predisposed to epidemic disease. Because it requires a given quantity of carbonic acid in the air to produce immediately injurious effects, it does not follow that a much lower proportion does not seriously impair the constitutional energies, and especially the power of resisting disease. Many a case of disease proves fatal on account of an unperceived depression of the sufferer's strength by continued exposure to an atmosphere impure from bodily exhalations. That vitiated air produces intellectual stupor, depression of the feelings, headache, and predisposition to take cold, is proved by very slight observation; and upon few things is enlightened medical experience more unanimous than that it either causes or greatly aggravates the most malignant diseases, such as fevers, inflammations, infantine maladies, cholera, scrofula, and consumption. As an illustration of the general and most culpable neglect of these subjects, we make the following extract from the report of a committee of the New York board of education in 1861: "Of the 92 school buildings under the charge of the board, there are not 10 which are thoroughly heated; in several, during the past winter, the cold has been so intense at times as to render the dismissal of the schools a matter of necessity; and it is no extraordinary sight to see teachers, in the performance of their duties in school hours, dressed in furs. The obstacles presented by school buildings to ventilation, the great quantity of fresh air required, and the difficulty of obtaining it without unpleasant draughts, have been so serious and so formidable, that in comparatively few of the school buildings has any attempt been made to secure ventilation. The results of this general lack of ventilation are seen in the listlessness on the part of both teachers and scholars, and the dull following of routine, which are such standing subjects of complaint, but which are only the inevitable consequences of breathing an atmosphere saturated with the noxious vapors exhaled from the lungs, bodies, and dress of the masses of children congregated in a single building. From 300 to 500 lbs. of fetid vapor are thrown off in the breath, and by insensible perspiration, from every thousand children during school hours each day, in addition to some 200 lbs. of the deadly poison carbonic acid gas. To breathe this foul air tends to produce irritability in teachers and peevishness in scholars; respiration is often impeded, and a tight band appears to be drawn around the forehead. If long continued, the rottenness of the air is communicated to the lungs, and lung diseases are generated. The enormous mortality from diseases of the lungs in this city, averaging 190 deaths per week, is in great part attributable to the foul air breathed every day by 60,000 children in the schools. The prevalence of scarlet fever, which for the past few years has been remarkably great in the primary schools, may be attributable to the same cause in even greater degree."—The amount of air required for each person per minute is estimated by various authorities at from 4 to 10 cubic feet, and this requires specific and adequate ventilating arrangements. Undoubtedly doors, windows, and chance crevices afford a partial exchange of air; but it is this accidental ventilation which, by effecting the purpose in an imperfect degree, has prevented mankind from sooner discovering the want of something better. Spontaneous ventilation, through air flues from the ceiling to the roof, and from open windows and doors, may answer very well in summer, except where many are crowded together as in schools, and asylums; but in cold weather, when the house is closed, fresh air must be introduced and foul air expelled by the application of force. The agent of warmth then becomes the motor of ventilation. We have therefore to notice fireplaces, stoves, and various hot air devices, in their twofold relation to heating and ventilation.—In the ordinary open fireplace the heat is entirely radiant, being thrown off directly from the burning fuel, or reflected from the sides and back of the fireplace. It strikes upon the walls, ceiling, floor, and furniture of the room; a portion of it is reflected in various directions, and the rest is absorbed. The objects which receive it are warmed, and gradually impart their heat to the air in contact, thus producing general and equalizing currents. As the fireplace is situated at the side of the apartment, and as radiant heat decreases rapidly in intensity, the heating is very unequal. The air near the fire may be very hot and at a distance cold, while a person can be warmed only on one side at the same time. The open fireplace is the most wasteful of all the arrangements for warming, as a copious stream of air passes up the chimney which takes no part in combustion, but carries off with it much heat. In the earlier fireplaces $\frac{7}{8}$, Rumford says $\frac{15}{16}$, of all the heat generated escaped upward through the chimney, and in the best constructed ones probably from $\frac{1}{2}$ to $\frac{3}{4}$ is thus lost. Peclet has proved that the heat radiated from burning wood is but $\frac{1}{4}$, and from coal but $\frac{1}{2}$, of the whole amount produced. The coal grate is a more economical contrivance for warming than the larger wood fireplace, chiefly because it lessens the current of air which enters the flue. Like the fireplace, it is closed on 3 sides, and these should be of some slow-conducting substance, and not of iron, which conducts away the heat so fast as to deaden combustion. The art of burning fuel to the best advantage in open grates is to maintain the whole mass in a state of bright incandescence by preventing all unnecessary abstraction of heat, either by contact of surrounding metal or currents of cold air flowing over the fire. A circular front favors radiation into the room, but it exposes the fire to so much air that in cold weather the combustion may be seriously obstructed; and fuel may thus smoulder away with the production of very little sensible heat. To be burned with economy, it must consume rapidly and with vivid combustion. To insure this perfect combustion, the air which comes in contact with the fuel must part with the whole of its oxygen. Every particle of air passing up through the fire which does not aid combustion, obstructs it, first by carrying off a portion of the heat, and secondly by cooling the ignited surface so that it attracts the oxygen with less vehemence. Air entering below a fire rapidly loses its oxygen and becomes contaminated with carbonic acid, both changes unfitting it for carrying on the process actively in the upper regions of the fire. If therefore the mass of burning material be too deep, the upper portions burn feebly and at least advantage; or if the pieces of coal be very large, scarcely any depth of fuel will be sufficient to decompose the whole of the air which rises through the wide spaces. The modifications of fireplace and grate are innumerable. An iron plate for a fire-back has been employed to warm an adjoining room behind the fireplace. For the same purpose grates have been hung upon pivots, so as to revolve and thus warm two rooms alternately. In Arnott's new grate the coal is introduced below, the fire working its way downward and consuming the smoke. Grates should not be set too low, for as heat is constantly diffused through the room by ascending currents of warm air, the upper parts will be most comfortable, and the main object of the grate should be to warm the floor. If situated very low, the heat rays will not strike the floor, but pass along parallel with the carpet, as the sun's rays at sunrise pass along the surface of the earth. If, however, the fire be raised, its downward radiations strike upon the floor at some distance back with sufficient force to warm it, just as the sun's influence becomes more intense as he ascends in the heavens. The open fireplace secures considerable ventilation, for wherever there is active combustion there must be a stream of air passing out of the room through the chimney. If the room be tightly closed there is no draught, and the chimney will smoke. The magnitude of the open space above the fire, which has been mentioned as a source of waste heat, represents the ventilating capacity of the chimney. But it is from the air below the level of the mantel, the purest in the apartment, that the fire is supplied, the vitiated air above being only withdrawn as it cools and descends. In cold weather, when the fire is active, disagreeable currents of cold air are swept along the floor toward the fire. The changes which of late have been effected in the construction of the fireplace to save its heat, the contracting its dimensions, and the lowering of the chimney piece, have been unfavorable to ventilation. The double fireplace is an admirable arrangement, both for heating and ventilation. A fireplace of soapstone or other material is set up within another, leaving a vacant space between them into which cold air is admitted from without, warmed and thrown into the room through an opening or register above. The efficiency of the single fireplace is also increased by introducing a flue of some thin material into the chimney, the lower extremity communicating with the external air and the upper one with the apartment. In connection with the fireplace may be mentioned the Franklin stove (see Stove), which secures both warming and ventilation.—Stoves heat by radiation in all directions from their surfaces; they also heat the air, which, rising to the upper part of the room, is diffused by circulation. Stoves are sometimes made of brick, earthenware, or porcelain, though chiefly of iron. Where a room is tight, with no loss of heat by outflowing air, and the smoke escapes into the chimney at the temperature of the room, the stove becomes the perfection of economy in heating. Air-tight stoves admit the air in small and regulated quantities so as to produce a slow combustion. But this is less economical than is generally supposed, causing a low, smothered, incomplete combustion, a kind of dry distillation, in which much unconsumed fuel escapes in a gaseous form; whereas, to evoke the largest amount of heat, combustion should be at once carried to its maximum by the production of carbonic acid and water. The desirable points in stoves are self-acting contrivances to regulate the draught; accurate fitting of the parts; enclosure of the fire space with slow conductors, as fire brick; and the bringing of all the heated products of combustion in contact with the largest possible absorbing and radiating metallic surface, so that the iron will give out its warmth at a low temperature. The ventilation commonly afforded by stoves is very imperfect, only the smallest amount of air being removed from the apartment which is necessary for combustion, while they unquestionably exert a more or less deleterious action upon the remaining air when made very hot. Precisely what the effect of red-hot iron is upon air or persons is not determined, and in the absence of clear knowledge much is said with but very little warrant. For example, it is often stated that red-hot iron burns the oxygen out of the air. This effect, however, is so slight as to be of no practical importance. The compound formed by the union of oxygen and iron, under these circumstances, contains 32 parts by weight of the former to 82 of the latter; that is, it will require 32 lbs. of oxygen entirely to consume a stove weighing 82 lbs., or all the oxygen in 1,800 cubic feet of air. A stove heated red-hot and exposed to the air would, if completely burned in 300 days, consume 6 feet of air per day, and it would require 19 such stoves to burn the air as fast as one pair of human lungs. But in estimating the effects of red-hot iron upon the human system, we must not forget that, as there are various kinds of light which may influence the eye differently, so there are various kinds of heat which may affect the body differently. The luminous heat from red-hot iron penetrates glass, while the dark heat of a lower temperature is arrested by it, although it will pass freely through plates of rock salt. By decomposing the organic particles of dust which float in the air of inhabited apartments, hot iron occasions the peculiar odor of "burnt air." Putting aside their lack of ventilation, stoves are generally regarded as the cheapest mode of warming, but we can give to this opinion only a qualified acceptance. Of the 92 school houses under the charge of the New York board of education, 66 are warmed by stoves, and its committee report that even if they afforded adequate ventilation, so fluctuating is the temperature, so unequal is the distribution of heat they give, and so great the danger of fire, that they ought to be condemned. But, beside this, they say: "The first cost of heating by stoves is greater than by any other method known to your committee. In an ordinary school building, for instance, costing $42,000, $6,000 worth of space is taken up by stoves, and the building will accommodate only about as many pupils as a furnace-heated building one seventh smaller, costing but $36,000."—The old English cockle stove, introduced by Mr. Strutt toward the close of the last century, warming houses by the distribution of heated air, was the progenitor of our hot air furnaces. It consisted of a cylindrical fire chamber with a dome-shaped head, which was placed in a bed of masonry, with a grating and ash pit below. This part, which from its shape was called the cockle, was enclosed at a little distance by a concentric wall of brickwork, the interval forming a hot air space. Air introduced from without was thrown into this space against the surface of the iron chamber, and, being heated and rarefied, ascended through openings and was conveyed to the rooms required to be warmed. This method was variously modified and much improved. Mr. Sylvester applied it to the Wakefield lunatic asylum so effectually as to change the whole air of the building, 400,000 cubic feet, each hour. The modern hot air furnace is similar in construction to the Strutt heater. It consists of an iron stove, which may be of various shapes, and which is surrounded either by an iron or a brickwork case, with a hot air chamber between. It is situated either in the basement or cellar, while air brought from without, or too commonly from the subterranean apartments, is introduced through proper openings, heated, and, rising through air flues, is distributed to the different apartments; entering them by registers at the base or ceiling, it mingles with the cold air and warms the room. It is urged in behalf of hot air furnaces, as against stoves and fireplaces, that they are out of the way and save space; that they are cleanly and give but little trouble in attendance; that they are economical in first cost and in consumption of fuel; that they warm the whole house, or such parts of it as may at any time be desired; and that they afford an abundant supply of air for ventilation. On the other hand, it is urged that in the way they are generally constructed, from the expansion and contraction of the metal, their joints are liable to open so as to allow the escape of the combustion products into the air chamber; that sparks of fire are thus often carried through the building with the greatest danger of conflagration; and that their red-hot iron surfaces so "burn," or in some way change the air, as to render it unfit for respiration. Indeed, there is a general conviction that hot air furnaces are unwholesome and injurious. This opinion, being the result of extensive experience, is probably just; but the evils are chiefly those of faulty construction and mismanagement in their use, as they have been employed for years in many establishments with entire satisfaction. Mr. Henry Ruttan, of Cobourg, C. W., has introduced an arrangement called the air warmer, which seems to combine the better qualities of stoves and furnaces, and to be free from their chief objections. It consists of one stove enclosed within another, with sufficient space between to admit a large amount of air, which is brought from without, enters below the air warmer, and passes into the room above. Instead of heating a small quantity of air to a high temperature, the principle of this arrangement is to moderately warm a large amount of it, and depend upon its rapid exchange to keep the apartments at a proper temperature. The air warmers of several sizes, varying in price from $25 to $150, are placed either in the room, the hall, or the basement, and may warm by direct radiation, as well as by circulation of air. The inventor's aim was to secure the cheapness and simplicity of the stove with the ventilating efficiency of the more expensive apparatus, and his arrangement has been very successfully employed in private dwellings, railroad cars, and various public institutions.—The first attempt to use hot water as a means of warming dates back as far as 1715, when Sir Martin Triewald warmed a greenhouse by it at Newcastle-upon-Tyne. But the first successful effort on a large scale was made by M. Bonnemain, in an apparatus for hatching chickens for the Paris market. The employment of water for heating purposes depends upon two principles. First, when unequally warmed, its equilibrium is disturbed, and it is thrown into movement. If a tube passes into the upper part of a boiler, and, making a circuit, reënters the lower part, heating the water in the boiler gives rise to a circulation through the tube. The hot water flows away above, and, cooling, descends and returns to the boiler below. Second, the capacity of water for heat is so great, that is, it holds so large an amount of it, that it gives out a large quantity as it cools, and is thus an admirable medium for its distribution. When the heat of a cubic foot of water is imparted to air, whatever be the number of degrees through which the water falls, it will raise through the same number of degrees 2,850 cubic feet of air. There are two modes of warming by hot water. In one the circulation takes place through a system of small tubes distributed through the house, and constructed to fit any form and succession of rooms and passages; or they are coiled into heaps in various situations, and impart their heat by direct radiation. This is Perkins's arrangement. It has no boiler, its place being supplied by a portion of the pipe coiled up in the furnace, and is a high pressure method, the temperature of the water rising to 300° or 350°. The warmth diffused from a coil of pipes in a room is mild and pleasant, but in point of ventilation it is the very worst contrivance possible. In the other form of hot water apparatus, the pipes do not ascend to any considerable height above the boiler; there is but slight pressure, and the heat does not rise above the boiling point. The boiler and masses of pipes are placed in the cellar or basement, and air from without, warmed by passing among the coils of tubing, is distributed to the apartments through flues and registers. As the boiler and tubes contain considerable water, its temperature rises slowly when fire is first applied, and, the quantity of caloric to be given out being large, it cools with equal slowness. Hence the arrangement is well suited to those cases where permanent and unvarying heat is required, as greenhouses, graperies, &c. Hot water pipes thus arranged are a source of steady and equable heat; they do not scorch the air as furnaces are apt to do, and they produce a copious and pleasant ventilation, but are too expensive for common use in dwellings.—Steam was first applied to heating purposes in England in the winter of 1784–'5 by James Watt, who employed it for warming his study. The method of heating buildings by steam depends upon its rapid condensation into water when admitted into any vessel colder than itself. In condensation the large amount of latent heat that steam contains is imparted to the enclosing vessels or pipes, and the resulting water either flows back to the boiler, or falls into reservoirs at various points, and may be drawn off by a cock. We may gather an idea of the amount of latent heat in steam from the fact that if a pound of it is condensed, the heat set free is enough to raise 5½ lbs. of water from freezing to boiling. Steam, like hot water, is used for warming in two ways: either by heating coils of pipes or combined metallic sheets arranged in the various apartments, and which warm by direct radiation; or by heating air, and sending it through the building. As in the similar case of hot water, just mentioned, the former method is wholly objectionable from its lack of the slightest provision for ventilation. It has been estimated that the boiler adapted to an engine of one horse power is sufficient for heating 50,000 cubic feet of space; and that if steam from the boiler of a working engine is to be used for warming, the boiler requires to be enlarged at the rate of one cubic foot for every 2,000 cubic feet of space heated to the temperature of 70° or 80°. The amount of heat lost through windows, walls, and by escaping air has been variously estimated by different writers. Dr. Arnott says that in a winter's day, with the external temperature at 10° below freezing, it requires, to maintain an apartment at 60°, a steam pipe heated to 200°, or about one foot square for every 6 feet of single glass windows; as much for every 120 feet of wall, roof, or ceiling, and as much for every 6 cubic feet of hot air escaping each minute in the way of ventilation. Hence, a room 16 feet square by 12 feet high, with two windows, each 7 by 3, with ventilation at the rate of 16 cubic feet per minute, would require 20 square feet of radiating surface. Steam for heating is used at a very low pressure, and the various precautions employed render it quite safe. Its arrangements are so perfect also that it is managed with but little trouble, and the ventilation is very satisfactory. For heating large establishments this method has come into extensive use, but, like hot water, it is too expensive for most private dwellings.—Ventilation on a large scale is produced by fans driven by steam power. The fan consists of several vanes, or blades, inserted into a shaft and made to revolve with it. By the rotation of the blades the air is driven, by centrifugal influence, to the circumference, tending to create a vacuum at the centre. If two sides be added to the vanes, having an opening round the axis, when the fan is thrown into revolution, air will rush in through the openings and out at the circumference continuously. If tubes connect these central openings with an apartment, its air will be exhausted; and if the circumference be suitably connected with a room, the air will be driven into it. The same machine therefore becomes an exhaust fan or a blowing fan according to the mode of its use. Air impelled by a fan may be heated by various expedients for use in cold weather, but this mode of ventilation is independent of warming, and is chiefly valuable in summer in large establishments, as asylums and hospitals, where many persons are gathered.—Ventilating chimneys are flues, sometimes made very high and large, in which fires create powerful draughts that are employed to exhaust apartments of vitiated air. An extra ventilating flue may be constructed adjoining the chimney, warmed by it, and opening into the top of the room, and this may have connecting tubes extending to remote apartments for the ventilation of the whole house. But double outlets to the same apartment rarely work satisfactorily, as the chimney is apt to convert the extra flue into a feeder of the fire, while the smoke escaping from the chimney may be drawn down the flue into the room. The efficiency of ventiducts is augmented by surmounting them with ejectors, which increase their exhaustive action when the wind blows. But under ordinary circumstances, or in the absence of other arrangements, the chimney may be used for conveying away foul air, the velocity of the ascending current, which is usually from 3 to 4 feet per second, giving it considerable exhaustive power. If therefore an opening is made in it near the ceiling, the foul gases accumulated above rush in, and are carried upward with the current. Yet if from any cause the draught of the chimney be interrupted, smoke is driven into the room, an ordinary register, requiring personal attendance, being of little use. To remedy this inconvenience, Dr. Arnott constructed a self-acting suspension valve, which is placed in the aperture, and so mounted that a current of air passing into the chimney opens it, while an opposite current closes it. A modification of this valve consists of a square piece of wire gauze set in the opening with a curtain of oiled silk suspended behind. In the thousands of stifling, stove-heated rooms, where pallor of countenance, headache, and nervousness bear painful witness to the perverted and poisoned state of the air, these simple contrivances would be invaluable.—The point of entrance of air into a building is a matter of considerable importance, and too much neglected. If there be local sources of impurity in the vicinity, or the annoyance of dust, the aperture of ingress should be placed unfavorably to the admission of the vitiated air. If there are organic contaminations near the ground, the air should be brought from the top of the house. Openings are sometimes made under the eaves, leading to channels constructed in the walls, which open into the room, or furnish air for the warming apparatus. Where stoves or hot air arrangements are employed, the free addition of moisture to the air is of the utmost importance. The common practice of setting a small vessel of water on a stove or in a furnace is altogether inadequate. There should be large surfaces for evaporation, which are perhaps best secured by means of linen or cotton cloth dipped in water and hung from any convenient framework. An "endless towel," hanging upon a roller with its lower part dipped in a trough of water beneath, answers admirably, as it is easily turned at any moment, thus keeping a large wet surface constantly exposed to the air.—The practical question arises in ventilation, at what points the air should be introduced into an apartment, and removed from it. The breath, as it escapes into the still atmosphere, at the temperature of the body, is so rarefied that it ascends. The warmth of the body, imparting itself to the surrounding air, expands it and causes a rising current. When the temperature of the room is 65°, the body is 33° warmer, while 4° added to the circumjacent air is sufficient to give it an ascending movement. A kind of natural ventilation of the person is thus effected, and as it is not desirable to bring the vitiated air back to breathe over again, this movement has been taken as nature's hint, and the plan of upward ventilation generally adopted, the air entering at the floor, and, as it rises to the ceiling, escaping through registers above. Such an outlet is infinitely preferable to having a room sealed, with no escape for its foul air; and even where the ventilation is feeble, it may be the best method. But if hot air intended for warming and ventilation enters below, it of course rises to the ceiling, and, if it finds openings there, escapes with but little benefit to the occupants of the room. If, on the other hand, the egress be at the floor, there is a constant descent of the pure atmosphere; and if the action be at all brisk, the escaping breath is rapidly swept downward, thus keeping pure the zone of respiration. It is said that, as warm air tends to rise, the upward movement is the natural one; but the true statement is, that air moves in obedience to force, and whether it be applied to move it upward or downward, the motion is equally natural. What is required is a constant supply of fresh air at the proper temperature, and whatever secures that is most in harmony with nature.

WARNER, Susan, an American authoress, born in New York in the early part of the present century. She is the daughter of Henry W. Warner, a lawyer by profession, and author of an "Inquiry into the Moral and Religious Character of the American Government" and "The Liberties of America;" and for a number of years she has resided with her family on Constitution island in the Hudson river, opposite West Point. Her first essay in literature was a novel entitled "The Wide, Wide World," published in 1850 under the pseudonyme of Elizabeth Wetherell, and which, as a picture of American domestic life, attained a considerable popularity both in America and Europe, as many as 35,000 copies having been sold in the United States alone. It was succeeded by "Queechy" (2 vols., 1852), which had also a large circulation, and like its predecessor has been translated into French, and "The Hills of the Shatemuck" (1856), containing many glimpses of American scenery in the neighborhood of her residence. She is also the author of "The Law and the Testimony" (8vo., 1853), in which the texts proving the great doctrines of Christianity are brought together under their appropriate heads; of a prize essay on "The Duties of American Women;" and of a volume entitled "Lyrics from the Wide, Wide World." The prevailing tone of her books is religious.—Anna B., sister of the preceding, has also a considerable reputation as an authoress. She has published "Dollars and Cents, by Amy Lothrop" (2 vols., 1853), "My Brother's Keeper" (2 vols., 1855), and, in connection with her sister, "Ellen Montgomery's Book Case" (1853–'5), a series in 4 vols. for young persons. In 1860 appeared a work entitled "Say and Seal," the joint production of the sisters (2 vols. 12mo., Philadelphia).

WARRANTY, a term used in law, in the transfer of real estate, in the sale of chattels, and in contracts of insurance. The learning of real warranties abounds in the old books, and was subtle and technical in an extreme degree. Sir Edward Coke spoke of it as "one of the most curious and cunning learnings of the law." But much of it is now abolished in England; much is of little practical use or employment there; and it may be doubted whether it ever had any force in the United States. It is quite certain that now, through all the states, the warranties of land are only those expressed in the deed of grant or lease, and they are personal covenants, although they may run with the land. A deed may be wholly without warranty, in which case it is a mere deed of release or quitclaim; or it may contain such limited warranties as the grantor chooses to give and the grantee is willing to accept.—Warranty in contracts of insurance has been treated under Insurance, and this article will be confined to warranty in the sale of chattels or personal property. This warranty may be a warranty of title in the seller, or a warranty of the character or quality of the thing sold. As to warranty of title, which is seldom expressed, the courts of England and of the United States, after some fluctuation and uncertainty, are now agreed in establishing the just and sensible rule, that he who sells as his own property a chattel in his possession, must be regarded as warranting that he owns the chattel and has a right to sell it in that way, although nothing is said about the title. As to the quality, the warranty may be express or implied. If it is express, it is always open to such construction from the circumstances and character of the transaction, and the usage in similar cases, as shall make the engagement of warranty conform to the intention and the understanding of the parties. But words of warranty are always subjected to a precise and perhaps severe interpretation, because the buyer may and should always take care that the warranty gives him just the protection he desired, and must abide any loss arising from any deficiency or ambiguity in the terms used. If there be no express warranty, then it cannot be doubted that in England and in the United States, and with the concurrence of all the courts, the principle of *caveat emptor* (let the buyer beware) comes in. This may indeed be regarded as a law of sale. Undoubtedly it is a rule which works much hardship and covers much fraud. Eminent members of the legal profession, and some in high office, have lamented, and perhaps reproached this rule as the cause of much iniquity. It is obvious however that courts must have a general rule on this subject. The law, dealing with a buyer and a seller, must determine on which of them the risk and responsibility rest. It must therefore adopt the rule of *caveat emptor*, and say that it is the duty of the buyer to take sufficient care for himself, which he may do either by sufficient examination or by demanding an express warranty; or else it must say that the responsibility must rest on the seller, and that whenever the thing sold turns out to be other than the buyer supposed, the seller must make it good. Either of these rules would have some advantages and be open to some objections; and upon the whole, we believe that the commercial experience of England and of this country is decidedly in favor of the rule of *caveat emptor*. At the same time, the courts have applied important limitations and qualifications to the rule, and as now administered it seems to work well.—In the first place, the rule is never applied to fraud, direct or indirect, or of any kind. It is therefore important to know what is meant by legal fraud. The question is considered in many cases, and particularly in one of much interest which came before the United States supreme court (2 Wheaton, 178). In this case Chief Justice Marshall declared that neither buyer nor seller is bound to communicate to the other information possessed exclusively by him, where the means of intelligence are equally accessible to both parties. The numerous cases on this question are not in harmony; but from them the general rule may be drawn, that any party may by his silence alone permit another to deceive himself, but if he cause or aid the deception by act or word it becomes a fraud on his part.—Another rule is, that no mere praise or commendation of an article or invitation to trade binds the seller. But if a seller, pending the negotiation for sale, makes a positive affirmation of quality, intending to effect a sale thereby, and in fact causing or materially promoting the sale, such affirmation is a warranty. If made in good faith, it is a warranty; and if falsely made, it is both a warranty and a fraud. It is certain that the word "warrant" need not be used, nor any other word of exactly equivalent meaning. If the fair meaning of all the words used imports an undertaking or agreement of the seller as to the quality of the thing sold, it is a warranty.—There are interesting cases on the question how far a bill of sale effects a warranty by its description of the thing sold. Thus, a bill of sale, "A bought of B two cases of indigo, $272," where the article, sold in good faith, turned out to be not indigo but a composition principally of Prussian blue, was held to be a warranty that the article was indigo, but no warranty of its quality. Another bill, "Sold A B 2,000 gallons prime quality winter oil," was held to be a warranty, not only that the article was oil, and winter strained, but of prime quality. But where the bill of sale described the article as "superior sweet-scented Kentucky leaf tobacco," it was held that the warranty implied by the bill was satisfied by the fact that the tobacco was Kentucky leaf, although it was neither superior nor sweet-scented, but ill-flavored and unfit for market. Upon the whole, the better and perhaps the prevalent rule appears to be, that a written bill of sale, or sale note, is a warranty of all that it distinctly expresses. There is in some courts a disposition to limit this implied warranty to cases where the buyer has no opportunity for examination. Indeed, it seems to be agreed, that the rule of *caveat emptor* necessarily implies one exception; for the law would not require him to "beware" who cannot comply with the demand. If then a seller, having certain knowledge exclusively, sells under circumstances indicating not only that the buyer trusted to his representations, but was compelled to trust to them, these representations would have the effect of warranty. In the fluctuation which has attended this question, there has sometimes been a disposition to hold that "a sound price implies a sound quality," and therefore that all goods fairly bought for a market are warranted by the seller as fit for the market. But this, which is the rule of the Roman civil law, seems now not to be law in any of our states excepting South Carolina and Louisiana. If an article is sold, however, not for general use or for a market, but for a specific purpose distinctly made known to the seller, he is held to warrant it to be fit for that purpose. But this rule does not apply where a specific article is bought merely in the belief that it will effect a certain purpose. Some very nice cases have turned upon the application of this principle. Thus, where the buyer's order was: "Send me your patent hopper and apparatus with your smoke-consuming furnace," and the furnace did not consume the smoke, it was held that the buyer ordered a specific article, and took the risk of its answering his purpose. But where a seller sold, under a written agreement, "a two-color printing machine on my patent principle," and the machine would not print well in two colors, it was held that the buyer bought and the seller sold an article for a specific purpose, and the buyer was not bound for the price because there was an implied warranty and a breach of it.—Where goods are sold by sample, there is, by the prevailing rule, an implied warranty that the goods shall be equal to the sample; but if they are as good as the sample, this is enough, although the sample had a latent defect, unless the seller knew of this defect and purposely concealed it.—No warranty can be implied from circumstances, where there is an express refusal to warrant. But this rule is never permitted to cover actual fraud. Thus ships are frequently sold by auction, "as they are," or "with all faults." This is an exclusion of warranty; but if the seller knows of faults which are not obvious, and does or says any thing to conceal them or draw the attention of the buyer away from them (as where a ship had her bottom worm-eaten and her keel broken, and the seller took her from the ways and kept her afloat where the defects could not be seen), it would be held that the sale would be invalidated by the fraud, although there was no warranty. If the contract of sale is in writing, and there be no fraud, evidence is not admissible to show that there was a parol warranty outside of the contract; because it is a universal rule, that a written agreement shall not be contradicted or varied by parol testimony. And for the same reason a written warranty cannot be enlarged, diminished, or qualified by parol testimony. But no warranty need be in writing. If it can be distinctly proved, it has the same force if spoken as if written. There is an important exception to the above rule of evidence; it has no application to a mere receipt for money, which is always open to evidence; and therefore an ordinary bill of parcels, or any instrument intended to operate principally as an indication of the price and an acknowledgment of its payment, is always open to explanation or to evidence of parol warranty.—Whatever may be the law as to implied warranties, it seems to be agreed that it has no application whatever to the sale or lease of real estate. From the numerous cases on this subject, it seems difficult to draw any other rule, than that in a deed of sale, or a lease of land or of a house or store, there is no warranty other than that or those which the instrument contains; none, for example, that the premises are fit for the purpose of habitation, occupation, or cultivation, or are adapted for the particular purpose for which they are bought or hired. But in many cases where this question might arise, the buyer or hirer may undoubtedly have a remedy of some kind against the seller or lessor, although not for breach of warranty.—In practice, the question what is a breach of warranty arises under the sale of horses "warranted sound," more frequently than elsewhere. From the multitudinous and contradictory cases on this subject, it can only be said here, that a defect impairing the animal for present service, or which in its ordinary and natural progress must do so, is generally admitted to be unsoundness. Thus, a "bone spavin," the "navicular disease," "ossification of the cartilages," and "thick-wind" have all been held to be unsoundness. "Crib-biting" and "curby hocks" are not. "Roaring" has been held to be, and also not to be, unsoundness. But a defect like crib-biting, though not unsoundness, is "a vice;" and if the horse is expressly warranted free from vice, it constitutes a breach.—It is sometimes an important question: What are the rights and remedies of one who buys with warranty, when there is a breach of warranty? On the whole, we should say that he may choose either to rescind the sale and return the thing bought, and defend against a suit for the price, or bring his action for it if he have paid it; or he may retain the thing bought, and bring his action for the breach of warranty, and then his damages will be diminished by the actual value of the thing bought and retained. So if he sells a part of the goods before he discovers the breach, and therefore cannot return them all, he may still return all that he can, and will then be liable only for the market value of the part which he does not return. But if he can return the whole, he should either return or retain it all. If he tenders the goods to the seller and the seller refuses to receive them, the buyer may sell them at once, with due notice to the seller, and due precaution to have a fair sale for a fair price; and then he may recover from the seller whatever he loses by this resale, with the expense of keeping the goods or chattels and selling them. There are however authorities which limit the right of the buyer to his action for the breach of warranty, and give him no right to rescind the sale and return the goods except in case of fraud. The United States courts tend to this view, and it is favored in New York, Pennsylvania, Kentucky, and Tennessee, and in some cases in England. If a seller with warranty brings his suit for the price, a mere breach of warranty without fraud is held by many English authorities, and by some in this country, to be no bar to the action, but only to give the buyer the right to set off against the price whatever damages he has sustained by the breach. It must be remembered, however, that the law of warranty, although often complicated in fact with the law of fraud, is in its own nature entirely distinct; for a seller with warranty is equally liable for the breach of it, whether he knew that the warranty was false, or was ignorant of this. It is also certain that whenever a buyer with warranty has the right to rescind the sale and return the goods because of a breach of the warranty, he must do this at once; for any unnecessary delay in doing so, or any act equivalent to acceptance, employment, or disposition of the thing bought after he knows the breach, will be construed to be a waiver of his right of rescission, and will limit him to his recovery of damages.—It should be added, that there is in general no implied warranty, and indeed none that is not precisely expressed, in judicial sales, as sales under execution or any order or decree of court. This rule has the sanction of the supreme court of the United States, and is, we suppose, universally admitted.

WARREN, the name of counties in 14 of the United States. I. A N. E. co. of N. Y., partly bounded on the E. by Lake George, intersected and partly bounded S. and W. by the Hudson river, and drained by the Schroon river; area, 912 sq. m.; pop. in 1860, 21,434. The surface is mountainous, and only about one third of the county is susceptible of cultivation. The productions in 1855 were 123,817 bushels of Indian corn, 5,497 of wheat, 120,347 of oats, 10,952 of rye, 19,214 of buckwheat, 173,328 of potatoes, 482,786 lbs. of butter, 64,634 of cheese, 18,615 of maple sugar, 39,001 of wool, and 22,088 tons of hay. There were 5 grist mills, 68 saw mills, 14 tanneries, 33 churches, 2 newspaper offices, and 7,812 pupils attending pupil schools. There is an abundance of iron ore, and limestone, marl, and black lead are found. Capital, Caldwell. II. A N. W. co. of N. J., bounded W. by the Delaware, which separates it from Pennsylvania, and S. E. by the Musconetcong river, and intersected by the Paulinskill and Pequest rivers; area, about 550 sq. m.; pop. in 1860, 28,434. Blue mountain is in the N. W. part, and Jenny Jump and Scott's mountains in the S. E. The elevated portions are well adapted to pasturage, and the soil of the valleys is fertile. The productions in 1850 were 198,760 bushels of wheat, 781,025 of Indian corn, 224,176 of rye, 230,966 of oats, 117,996 of buckwheat, 793,259 lbs. of butter, 48,754 of wool, and 22,628 tons of hay. There were 72 flour and grist mills, 36 saw mills, 12 distilleries, 6 woollen factories, 2 furnaces, 8 iron founderies, 7 tanneries, 2 newspaper offices, 48 churches, and 4,295 pupils attending public schools. Magnetic iron ore, hematite, bog iron ore, zinc, manganese, marble, soapstone, and roofing slate are found. The county is intersected by the Morris canal and the New Jersey central railroad. Capital, Belvidere. III. A N. W. co. of Penn., bordering on N. Y., intersected by the Alleghany river, and drained by Brokenstraw, Conewango, and other creeks; area, 832 sq. m.; pop. in 1860, 32,279. The surface is hilly, and the soil generally fertile. There are large forests of excellent timber. The productions in 1850 were 33,756 bushels of wheat, 83,398 of Indian corn, 156,480 of oats, 97,237 of potatoes, 335,725 lbs. of butter, 54,493 of wool, 83,705 of maple sugar, and 20,990 tons of hay. There were 7 grist mills, 143 saw mills, 2 iron founderies, 3 woollen factories, 4 tanneries, 3 newspaper offices, and 18 churches; and in 1860 there were 4,737 pupils attending public schools. Iron ore is found. This county forms part of the great oil region of Pennsylvania. It is intersected by the Philadelphia and Erie and the Atlantic and Great Western railroads. Capital, Warren. IV. A N. E. co. of Va., intersected by the Shenandoah river; area, 200 sq. m.; pop. in 1860, 6,442, of whom 1,575 were slaves. The Blue ridge extends along its S. E. border. The surface is hilly and the soil fertile. The productions in 1850 were 145,354 bushels of wheat, 128,875 of Indian corn, 25,906 of oats, 64,185 lbs. of butter, 17,371 of wool, and 2,219 tons of hay. There were 40 grist mills, 21 saw mills, 6 distilleries, 3 tanneries, 13 churches, and 484 pupils attending schools. Iron ore, copper, manganese, and limestone are found. The county is intersected by the Manassas Gap railroad. Capital, Front Royal. V. A N. co. of N. C., bordering on Va., bounded N. W. by the Warren river, and intersected in the N. E. by the Roanoke river; area, 391 sq. m.; pop. in 1860, 15,726, of whom 10,401 were slaves. The surface is elevated and undulating, and the soil fertile. The productions in 1850 were 349,502 bushels of Indian corn, 34,474 of wheat, 88,474 of oats, 45,390 of sweet potatoes, 2,430,730 lbs. of tobacco, 50,304 of butter, and 2,245 tons of hay. There were 8 grist mills, 4 saw mills, 3 tanneries, 21 churches, and 1,484 pupils attending public schools. There are several valuable mineral springs. The county is intersected by the Raleigh and Gaston and the Roanoke valley railroads. Capital, Warrenton. VI. An E. co. of Ga., bounded S. W. by the Ogeechee river; area, 450 sq. m.; pop. in 1860, 9,820, of whom 5,379 were slaves. The surface is undulating and the soil fertile. The productions in 1850 were 19,155 bushels of wheat, 428,364 of Indian corn, 44,119 of oats, 123,825 of sweet potatoes, 5,210 lbs. of rice, and 9,994 bales of cotton. There were 10 grist mills, 10 saw mills, 1 woollen factory, 27 churches, and 470 pupils attending public schools. Granite and soapstone abound. The county is intersected by the Georgia railroad. Capital, Warrenton. VII. A W. co. of Miss., separated from La. by the Mississippi river, bounded S. E. by Big Black river, and intersected by Steel's bayou and the Yazoo; area, 575 sq. m.; pop. in 1860, 20,710, of whom 13,763 were slaves. The surface is hilly in the E. part and low and level along the Mississippi, and the soil very fertile. The productions in 1850 were 451,875 bushels of Indian corn, 71,374 of sweet potatoes, 18,513 bales of cotton, and 88,664 lbs. of butter. There were 8 grist mills, 6 saw mills, 2 newspaper offices, 11 churches, and 708 pupils attending public schools. All the rivers which border on or intersect the county are navigated by steamboats, and the southern Mississippi railroad passes through it. Capital, Vicksburg. VIII. A central co. of Tenn., bounded N. E. by the Caney fork of Cumberland river, and drained by the Collins river and its affluents; area, 440 sq. m.; pop. in 1860, 11,147, of whom 2,320 were slaves. The surface is mountainous in the E. part and hilly in the W., and the soil tolerably fertile. The productions in 1850 were 474,705 bushels of Indian corn, 87,298 of oats, 26,349 of sweet potatoes, 16,454 lbs. of wool, and 78,838 of butter. There were 10 grist mills, 4 saw mills, 4 tanneries, 10 churches, and 780 pupils attending public schools. The McMinnville and Manchester railroad connects the capital, McMinnville, with the Nashville and Chattanooga railroad. IX. A S. W. co. of Ky., bounded N. by Green river and intersected by Big Barren river; area, 455 sq. m.; pop. in 1860, 17,325, of whom 5,318 were slaves. The surface is moderately hilly and the soil fertile. The productions in 1850 were 1,031,545 bushels of Indian corn, 33,473 of wheat, 198,600 of oats, 44,898 of Irish and sweet potatoes, 180,329 lbs. of butter, 32,336 of wool, and 1,401,751 of tobacco. There were 7 grist mills, 8 saw mills, 5 tanneries, 22 churches, and 1,100 pupils attending public schools. The county has several extensive caverns and monumental mounds. It is intersected by the Louisville and Nashville railroad. Capital, Bowling Green. X. A S. W. co. of Ohio, intersected by the Miami and Little Miami rivers; area, 400 sq. m.; pop. in 1860, 26,908. The surface is undulating and the soil highly fertile. The productions in 1850 were 251,606 bushels of wheat, 1,886,836 of Indian corn, 258,208 of oats, 60,895 of potatoes, 592,746 lbs. of butter, 78,365 of wool, and 14,201 tons of hay. There were 26 grist mills, 35 saw mills, 5 woollen factories, 11 tanneries, 3 newspaper offices, 60 churches, and 4,117 pupils attending public schools. The county contains several ancient mounds, and has an abundance of limestone. It is traversed by the Zanesville and Wilmington, the Little Miami, the Columbus and Xenia, and the Cincinnati, Hamilton, and Dayton railroads. Capital, Lebanon. XI. A W. co. of Ind., bordering on Ill., and bounded S. E. by the Wabash river; area, 360 sq. m.; pop. in 1860, 10,057. About one half the county is occupied by Grand Prairie; the rest is undulating, and the soil is very fertile. The productions in 1850 were 21,068 bushels of wheat, 1,024,386 of Indian corn, 95,442 of oats, 113,555 lbs. of butter, 33,384 of wool, and 5,900 tons of hay. There were 6 grist mills, 8 saw mills, 9 churches, and 1,700 pupils attending public schools. The Wabash and Lake Erie canal, and the Toledo, Wabash, and St. Louis railroad pass through the county. Capital, Williamsport. XII. A W. co. of Ill., drained by

Henderson river and several smaller streams; area, 540 sq. m.; pop. in 1860, 18,336. The surface is level and the soil highly fertile. The productions in 1850 were 122,645 bushels of wheat, 1,021,542 of Indian corn, 174,396 of oats, 188,495 lbs. of butter, 51,277 of wool, and 8,293 tons of hay. There were 5 grist mills, 11 saw mills, 13 churches, and 409 pupils attending public schools. Bituminous coal and limestone abound. The county is intersected by the Chicago, Burlington, and Quincy railroad. Capital, Monmouth. XIII. A S. co. of Iowa, intersected by South, Middle, and Upper Third rivers, and drained by several other tributaries of the Des Moines, which crosses the N. E. corner; area, 432 sq. m.; pop. in 1860, 10,282. It has a diversified surface of prairie and woodland, and the soil is very fertile. The productions in 1859 were 16,994 bushels of wheat, 492,612 of Indian corn, 17,632 of oats, 17,655 of potatoes, 151,189 lbs. of butter, 5,404 tons of hay, and 15,566 galls. of sorghum molasses. Bituminous coal is abundant. Capital, Indianola. XIV. An E. co. of Mo., bounded S. by the Missouri river; area, 350 sq. m; pop. in 1860, 8,833, of whom 1,034 were slaves. It has a varied surface, and the soil, especially along the river, is extremely fertile. The productions in 1850 were 35,732 bushels of wheat, 365,496 of Indian corn, 52,831 of oats, 69,639 lbs. of butter, 17,090 of wool, and 431,000 of tobacco. There were 20 churches, and 582 pupils attending public schools. Limestone and sandstone of excellent quality abound. Capital, Warrenton.

WARREN, James, a revolutionary patriot, born in Plymouth, Mass., in 1726, died there, Nov. 27, 1808. He was graduated at Harvard college in 1745, and for a number of years was engaged in mercantile pursuits. At the death of his father in 1757 he succeeded to a large patrimonial estate in Plymouth, and was appointed high sheriff, an office which his father had previously held, and which he retained till the commencement of the war. He was a member of the general court from Plymouth in 1766, and was uniform in his support of the rights of the colonies, and of all the measures brought forward by the revolutionary leaders. In 1773 he proposed the establishment of committees of correspondence for the different colonies, a measure generally adopted. During the revolution he was for some years speaker of the house of representatives. He was offered the office of lieutenant-governor of the state, and also of judge of the supreme court, but declined both, and finally accepted a seat in the navy board. At the close of the war he retired from public life.—Mercy, an American authoress, wife of the preceding, born in Barnstable, Mass., Sept. 25, 1728, died in Plymouth, Oct. 19, 1814. She was the sister of James Otis, the patriot and orator, and was married at the age of 26. Her feelings were strongly enlisted on the popular side during the revolutionary struggle, and she was in intimate correspondence with the two Adamses, Jefferson, and other distinguished patriots, who were accustomed to consult her on momentous occasions. Her earliest productions were political satires in a dramatic form, and in 1790 she published a volume of poems, including two tragedies, entitled "The Sack of Rome" and "The Ladies of Castile." Her most important work, however, was her "History of the American Revolution" (3 vols. 8vo., Boston, 1805), prepared from notes taken during the war, and which was long a standard authority.

WARREN, Sir John Borlase, an English naval officer, born at Stapleford, Nottinghamshire, in 1754, died in Greenwich, Feb. 27, 1822. He was sent to Winchester school, but, having a passionate love for the sea, ran away, and through the influence of friends was received on board the Alderney sloop of war as midshipman. After having served in that capacity for some time in the North sea, he returned to England, became a member of Emmanuel college, Cambridge, and took the degree of M.A. in 1776. In 1774 he entered parliament as member for Marlow, and in 1775 was created a baronet. On the breaking out of the American war he accepted a lieutenancy in the Nonsuch, in 1779 became commander of the Helena sloop of war, in 1780 was reëlected to parliament for Marlow, and in 1781 attained the rank of post-captain. In 1793, on the commencement of the war with France, he was appointed to the Flora frigate, in 1794 was made a knight of the bath, and in 1795 commanded the expedition to Quiberon bay to assist the insurrectionists of La Vendée, which was unsuccessful. In 1797 he obtained the command of the Canada of 74 guns, served off Brest under Lord Bridport, and was detached with a strong force to the coast of Ireland, where on Oct. 11, 1798, he fell in with a French squadron destined for the invasion of that country, and captured the Hoche line-of-battle ship and 3 frigates. For this he received the thanks of both houses of parliament, and was subsequently made rear-admiral of the blue. In 1793 he had been elected to the house of commons for Nottingham, and in 1802 was reëlected for the same place. He continued in the naval service until the peace of Amiens, when he was made privy councillor and sent to Russia as ambassador extraordinary and minister plenipotentiary, and there managed some delicate negotiations with regard to the retention of Malta with great ability. On his return he again entered into service, subsequently became vice-admiral, and in 1812 received the chief command in North America and the West Indies, but two years afterward gave up the post. At the time of his death he was admiral of the white, and knight grand cross of the bath. He is the supposed author of an anonymous work entitled "A View of the Naval Force of Great Britain" (8vo., 1791).

WARREN. I. **Joseph**, an American patriot, born in Roxbury, Mass., in 1741, killed in the battle of Bunker hill, June 17, 1775. He was graduated at Harvard college in 1759, studied medicine, and at the age of 23 settled in Boston, where he soon acquired an extensive practice. He early embraced the cause of the colonies in the controversy with the British government. His first appearance in public was on the occasion of the second anniversary of the Boston massacre, March 5, 1772, when, in consequence of the refusal of Samuel Adams to deliver the address, Warren was invited to discharge the duty, and acquitted himself with great ability. Three years afterward, when the exasperation between the troops and the citizens had risen to a much greater height, he again delivered the address, although the duty was attended with considerable danger. In 1772 he had been made a member of the committee of correspondence formed for the purpose of communicating with the several towns in Massachusetts. Later he was a delegate to the convention of Suffolk county which met to prevent Gov. Gage from carrying out his determination of fortifying the southern entrance of Boston by drawing lines across the neck connecting it with Roxbury. He was made chairman of the committee appointed to prepare an address to the governor upon the subject, and sent to him two papers, both written by himself, which were afterward communicated to the continental congress. In the autumn of 1774 he was elected a delegate to the Massachusetts congress, of which he was made president, and also chairman of the committee of public safety, consisting of 13 members of the congress, to whom the executive power was intrusted. By the fact of holding these two offices he became the virtual head of the new commonwealth. To his energy was in great measure due the successful result of the battle of Lexington, and by him Paul Revere and Dawes were sent on their midnight ride to inform the inhabitants of the coming of the British troops. Warren was at West Cambridge when the British troops returned, and in the skirmish there a bullet passed so close to his head as to carry away a lock of hair above his ear. On June 14, 1775, he received from the Massachusetts congress a commission as major-general, having previously refused one as surgeon-general. When the question of the occupation of Charlestown heights by the provincial troops was under deliberation, he opposed the project, against the advice of Prescott and Putnam, on the ground of the want of ammunition sufficient to resist the attack of the British troops. When a majority of the council of war determined to fortify Bunker hill, he however resolved to have a share in the action that would take place. After attending to his duties in the committee of public safety, he was warned by Elbridge Gerry against the hazard of exposing his person. "I know that I may fall," was the reply of Warren; "but where is the man who does not think it glorious and delightful to die for his country?" About 2 o'clock he went to Bunker hill unattended, and with a musket in his hand; and as he crossed the American works he was met by Putnam, who offered him the command. This he declined, and passed on to the redoubt, which was expected to be the chief point of attack, and there again the command was offered to him by Col. Prescott. "I have come," he answered, "to take a lesson of a veteran soldier in the art of war." He was one of the last to retire from the field, and his person being in great danger, Major Small of the British army called out to him by name from the redoubt and begged him to surrender, at the same time commanding his men to cease their fire. The order came too late. As he turned around at the voice a ball struck him on the forehead, killing him instantly. When Gen. Howe was assured that Warren was killed, he declared that his death was a full offset for the loss of 500 men. His remains were buried on the spot on which he fell, but the next year were removed to a tomb in the Tremont cemetery, and were finally placed in the family vault under St. Paul's church in Boston. His death was a source of universal grief to his countrymen. "Among the dead," says the official account of the battle of Bunker hill by the Massachusetts congress, "was Major-General Joseph Warren, a man whose memory will be endeared to his countrymen and to the worthy in every part and age of the world, so long as virtue and valor shall be esteemed among mankind." As his wife had died before him, his orphan children were left to the care of their paternal grandmother; but the year after his fall the continental congress passed a resolution that his eldest son should be educated at the public expense, and a few years later a further resolution was passed that public provision should be made for the education of the other children until the youngest should be of age. A statue of Gen. Warren, by Henry Dexter, was inaugurated on Bunker hill, June 17, 1857, the 82d anniversary of the battle, by the "Bunker Hill Monument Association." His life has been written by A. H. Everett, in Sparks's "American Biography." II. JOHN, M.D., an American physician, brother of the preceding, born in Roxbury, Mass., July 27, 1753, died in Boston, April 4, 1815. He was graduated at Harvard college in 1771, and passed two years in the study of medicine under the direction of his brother, whose patriotic views he fully shared and aided with his pen. He commenced practice in Salem in 1773. He was with the Salem regiment in the battle of Lexington, and remained a fortnight at Cambridge in charge of the wounded. In June he offered himself at camp as a volunteer, and was appointed senior surgeon to the hospital. He accompanied the army in all its worst perils and hardships during two years; after which he was appointed to the charge of the military hospitals in Boston. He soon obtained the confidence of the public, both as surgeon and physician, and eventually acquired a larger practice, probably, than any one in Boston before or since his time. He joined the expedition of Gen. Greene to Rhode Island in 1778, and another against the insurgent Shays in 1786. In 1780 he gave a course of dissections to his colleagues, then a great novelty, and conducted with great secrecy on account of popular prejudices. His enthusiastic interest in his subject, and his faculty of vivid description, led to the establishment of a medical school under his auspices attached to Harvard college; and he was appointed professor of anatomy. He continued to take an active part in all public events to the time of his death. In surgery he was a very successful operator, and introduced many operations previously unknown in the country. His principal publications were as follows: the first fourth of July oration, delivered in 1783; a "Dissertation on the Mercurial Practice in Febrile Diseases;" an address before the humane society; a eulogy on the Hon. Thomas Russell; and an address to the lodges of freemasons, of which he was grand master. He contributed many valuable papers to the "New England Journal of Medicine and Surgery," the "Memoirs" of the American academy, and the "Communications" of the Massachusetts medical society. III. John Collins, M.D., son of the preceding, born in Boston, Aug. 1, 1778, died there, May 4, 1856. He was graduated at Harvard college in 1797, and commenced the study of medicine with his father. In 1799 he went to London, passed one year as dresser at Guy's hospital, enjoying the advantages of instruction from William and Astley Cooper, the immediate pupils of John Hunter, attended the lectures at Edinburgh for 9 months, and then went to Paris, where he obtained a place in the family of the distinguished surgeon Dubois. Returning to Boston in the latter part of 1802, he soon found himself engaged in a large practice. In 1806 he was chosen adjunct professor of anatomy and surgery, and on his father's death in 1815 was elected to his professorship, and also succeeded to his practice. The Massachusetts general hospital was opened in 1820, and he was chosen surgeon, which office he held for 33 years. He soon acquired the position of the first surgeon in New England. In 1820 he became an active member of the Protestant Episcopal church, and for several years he was president of the Massachusetts society for the suppression of intemperance. In 1828 he became associate editor of the "Boston Medical and Surgical Journal," which he was principally instrumental in establishing. He made a second and a third visit to Europe in 1837 and 1852. In 1846 he was the first person who employed ether in a surgical operation, and to his sanction it owed the wonderful rapidity of its introduction throughout America and Europe. Beside numerous contributions to the papers of the Massachusetts medical society, the "New England Medical Journal," the "American Journal of the Medical Sciences," the "Boston Medical and Surgical Journal," the Boston society of natural history, the American academy, &c., he published a volume on "Diseases of the Heart" (1809); a "Comparative View of the Sensorial System in Man and Animals" (1820); "Remarks on Dislocation of the Hip Joint" (1826); "Surgical Observations on Tumors" (1837); "Etherization" (1848); and "Mastodon Giganteus" (1852). A memoir of Dr. Warren (2 vols. 8vo., Boston, 1859) has been published by his brother, Edward Warren, M.D.

WARREN, Sir Peter, an English naval officer, born in Ireland in 1703, died in that country, July 29, 1752. He early entered the navy, in 1727 was first appointed to a command, and on June 15, 1745, being then a commodore, distinguished himself by the capture of Louisburg. For this service he was made rear admiral of the blue, and after his return to England rear admiral of the white. In 1747 he was made second in command of the fleet under Anson, and for his share in the victory over the French fleet, bound for the recovery of Louisburg, was invested with the order of the bath, and made vice-admiral of the white, and in 1748 vice-admiral of the red. In 1747 he was returned to parliament for Westminster, and in 1752 was elected alderman of Billingsgate ward, but declined the office in a letter enclosing £200; but the inhabitants insisting upon his filling the office, he was finally obliged to pay £500 to avoid serving. He was buried in Westminster abbey, where a monument by Roubiliac is erected to his memory.

WARREN, Samuel, an English novelist and legal writer, born in Racre, Denbighshire, May 23, 1807. He is the son of a Wesleyan minister, afterward a clergyman of the church of England, and began the study of medicine at Edinburgh; but abandoning that profession for the law, he went to London in 1828, entered as a student at the Inner Temple, and in 1831 began to practise as a special pleader. In 1837 he was called to the bar. His literary taste had manifested itself at an early age, and in 1824 he had contributed to "Blackwood's Magazine" a story entitled "Blucher, or the Adventures of a Newfoundland Dog." Between 1830 and 1832 he furnished to the same periodical a series of articles under the title of "Passages from the Diary of a late Physician," which, though somewhat melodramatic in character, were written with so much power as to attract great attention, and were denounced in a medical journal for revealing the secrets of the sick room, on the supposition that the events recorded were true. His more celebrated work, "Ten Thousand a Year," begun in "Blackwood's Magazine" in 1839, is a novel of great power, written strongly in the interest of the conservative party in England. It was followed by "Now and Then," a novel generally regarded as far inferior in interest and power to either of his preceding works. In 1851, at the inauguration of the crystal palace, he published an allegorical poem in un-rhymed broken lines, called "The Lily and the Bee," which has been very generally and severely criticized. In 1854 his contributions to "Blackwood's Magazine" were published in 2 octavo volumes called "Miscellanies, Critical and Imaginative." As a legal writer Mr. Warren enjoys a high reputation, and has published, among other works, "A Popular and Practical Introduction to Law Studies" (1835; new ed., rewritten and enlarged, 1845); "Select Extracts from Blackstone's Commentaries, with a Glossary, Questions, and Notes" (1837); and "Moral, Social, and Professional Duties of Attorneys and Solicitors" (1848). Beside these, he has published several pamphlets, and works entitled "The Intellectual and Moral Improvement of the Present Age" (8vo., 1853), and "Labor, its Rights, Difficulties, Dignity, and Consolations" (1856). His complete literary works have been published in 5 volumes (1853–'5). In 1851 Mr. Warren was made queen's counsel, and in 1854 he was elected recorder of Hull, in which capacity he increased his reputation by his charges to the grand jury, some of which have been published. In 1856 he was elected a member of parliament for Midhurst, and was reëlected for the same borough in 1857, but is not a member of the present house (1862). In 1859, upon Lord Derby's accession to the ministry, he was made one of the masters in lunacy.

WARRICK, a S. W. co. of Indiana, separated from Kentucky by the Ohio river; area, 360 sq. m.; pop. in 1860, 10,057. It has a rolling surface, and the soil is very fertile. The productions in 1850 were 38,479 bushels of wheat, 415,061 of Indian corn, 39,991 of oats, and 2,074 tons of hay. There were 10 grist mills, 5 saw mills, 20 churches, and 985 pupils attending public schools. Bituminous coal is found. The county is intersected by the Wabash and Lake Erie canal. Capital, Booneville.

WARRINGTON, Lewis, an officer of the U. S. navy, born in Williamsburg, Va., Nov. 3, 1782, died in Washington, D. C., Oct. 12, 1851. He entered the navy as a midshipman in Jan. 1800, and served in the early part of his professional career under the command of Commodore Edward Preble in the war with Tripoli. In 1807 he was promoted to be lieutenant, and was attached to the Chesapeake in her rencounter with the British ship of war Leopard off the capes of Virginia on June 20 of that year. In July, 1813, he was made master commandant, and in March, 1814, sailed from New York in command of the Peacock, 18. On April 29 following he fell in off Cape Carnaveral, Florida, with a convoy of British merchantmen under the protection of a sloop of war, which the Peacock engaged. The first broadside crippled the Peacock's fore yard, when both ships ran off free, and a close conflict at yardarm and yardarm was maintained for 42 minutes, which was decided in favor of the Peacock by fair superiority of gunnery. The prize proved to be H. B. M. brig Epervier, Capt. Wales, of 18 32-pounder carronades and 128 men. On board her was found £118,000 in specie. She had 5 feet water in her hold when she surrendered, and was otherwise much cut up, and her loss was 22 killed and wounded. The Peacock sustained but little injury, had none killed, and but 2 wounded. She was the heavier of the two vessels, though the metal of both was nominally the same, but the disparity in the loss was much greater than that in force. The Epervier was sent into Savannah under the command of Lieut. I. B. Nicholson, and the Peacock continued her cruise until the end of October, when she arrived at New York, having captured, principally in the bay of Biscay, 14 British merchantmen. In Nov. 1814, Capt. Warrington sailed from New York, still in command of the Peacock, she being now one of a squadron of 4 vessels commanded by Commodore Stephen Decatur, jr., whose flag ship was the President, 44, which was captured by a British squadron soon after sailing, the other ships continuing to cruise. On June 30, 1815, the Peacock, in the strait of Sunda, fell in with the East India company's cruiser Nautilus, Capt. Boyce, and, having no knowledge that peace had been concluded, exchanged broadsides with her, when the Nautilus struck, having 6 killed and 8 wounded. The Peacock sustained no injury. The Nautilus was immediately given up, and the Peacock returned to the United States. In Nov. 1814, Warrington was made captain, and subsequently performed much important service both on shore and afloat, at one time commanding a squadron on the West India station. From 1827 to 1830, and from 1840 to 1842, he served as a member of the board of navy commissioners; and in Sept. 1842, he was appointed chief of the bureau of ordnance and hydrography, which office he held at the time of his death.

WARSAW, a government of the kingdom of Poland in Russia, formerly called Masovia, bounded N. by the government of Plock, E. by Lublin, S. by Radom, S. W. by the Prussian province of Silesia, and W. by Posen; area, 14,201 sq. m.; pop. in 1859, 1,699,461. It is a level country, drained by the Vistula and its tributaries the Pilica, Bzura, Bug, and Warta. It is divided into 13 circles. Somewhat more than ¾ of the inhabitants are Roman Catholics, and of the remainder more than ½ are Jews. The government has a large trade with Austria and Prussia.—Warsaw (Pol. *Warszawa*), the capital of the government and of the kingdom of Poland, is situated on the left bank of the Vistula, and connected by a bridge of boats with its fortified suburb of Praga on the right bank of that river, 626 m. from St. Petersburg and 324 from Berlin; lat. 52° 13′ 5″ N., long. 21° 2′ 9″ E.; pop. in 1859, 161,361, about ¼ of whom were Jews. It is 12 m. in circumference. The climate is not very severe, though the cold of winter is uniform and long continued. The mean temperature of the year is

44.1° F., of the winter 24.9°, and of summer 63.2°. The city proper has no fortifications, except its citadel, which, first built in 1832, has been strengthened under Russian rule by additional works, till it is now considered almost impregnable. The principal edifices of the city are the cathedral of St. John, the churches of the Holy Cross and St. Andrew, and a magnificent Lutheran church; the Zamek, the palace of the ancient Polish kings, now one of the residences of the czar, and containing the archives of the kingdom and the hall of the Polish diet; the government palace, an immense structure of recent erection; the palaces of Saxe, Brühl, Radziwill, Poniatowski, Zamojski, Krasinski, Pac, Potocki, Krassowski, and others. There are numerous fine squares, the most interesting being the Marieville bazaar, a copy of the Palais Royal of Paris, in or adjoining which are the exchange, the new theatre, the custom house, and 300 shops, and the place Sigismund, adorned with a colossal statue of Sigismund III. and a statue of Copernicus. The *place d'armes* is sufficiently large for 10,000 men to manœuvre. There are many other churches, chapels, and synagogues, 6 hospitals, 5 theatres, barracks, a mint, a school of artillery, 2 colleges replacing the ancient university (which was suppressed in 1834, its library of 150,000 volumes being removed to St. Petersburg), a theological seminary, a rabbinical college, an observatory, a botanic garden, a musical conservatory, 2 gymnasia, several schools of art, and numerous libraries and learned associations. Among the finest streets are the New World, the Cracow suburb, Senators' street, and Honey street. Warsaw has some of the finest promenades to be found in any city of Europe, and in its vicinity are costly and beautiful villas; among these the castles of Willanow, Belvedere, and Lazienki, the latter of which has an equestrian statue of John Sobieski, and is surrounded by public grounds of great extent and beauty. With these noble edifices are mingled here and there miserable hovels of wood, which greatly disfigure the aspect of the city. Warsaw has considerable manufactories of woollen and linen goods, hosiery, hats, gold and silver ware, salt, saddlery, paper, tobacco, carriages, chemicals, musical instruments, and liquors, cotton printing works, breweries, and brass founderies. It is the literary centre of Poland, the seat of the national bank, and the entrepot of the exports and imports of the region traversed by the Vistula and its navigable branches. It has two great fairs annually, in May and September, which are frequented by merchants from many parts of Europe and Asia. It is connected with Cracow by a railroad 282 m. long, and the railroad to St. Petersburg, 632 m. long, was to be completed by Jan. 1862. In the vicinity of Warsaw are the field of Wola, where the Polish diet formerly assembled for the election of kings, and numerous battle fields renowned in the history of Poland.—Warsaw is an ancient city, but for a long time was not of much importance. It became the capital of Poland in 1566 under Sigismund Augustus. Under its walls in 1656 a 3 days' battle was fought between the Poles and Charles Gustavus, king of Sweden, and his ally Frederic William of Brandenburg, in which the former were defeated. It was taken by Charles XII. in 1703, surrendered to Suwaroff after the storming of Praga in 1794, taken from Prussia in the second partition of Poland, and entered by Murat in 1806. It was the capital of the grand duchy of Warsaw from 1807 to 1814. The congress of Vienna delivered it over to Russia in 1815; the revolution of Nov. 1830, made it free for a time, but Gen. Paskevitch took it in Sept. 1831. In 1861 it was again the scene of serious disturbances.

WART, a well known excrescence on the skin, consisting of elongated papillæ of the dermis covered with cuticle. Warts are often superficial and movable, but generally implanted in the substance of the true skin, where they are retained by dense, whitish, fibrous filaments. The common flat wart is formed of small separate prolongations of the dermis, giving to it a furrowed or rough appearance; the shape is usually rounded, and the tissue firm and fibrous, sometimes almost cartilaginous; it is insensible at the surface, sensitive at the base, receiving small vessels which yield blood on incision; they are commonly painless, paler than the surface on which they rest, and seated principally on the hands. They are sometimes produced by compression and by neglect of cleanliness, and by the syphilitic virus about the openings of the mucous canals, showing the analogy between the skin and the mucous membranes; they come and go without apparent cause, especially in the young, and may go on increasing in spite of all treatment. The hard variety is not communicable by contact, but in some situations, where the cuticle is delicate, they exude a serous fluid which is commonly considered contagious. The pediculated warts are more vascular and redder, and either hard or soft; they are most common on the neck, chest, and back.—A great variety of remedies have been employed to remove warts, some very absurd and founded on ignorance and superstition. The most approved methods of treatment are by caustics, excision, and ligature, the latter especially for the pediculated kinds; a common way is to pare the wart, without bringing blood, and touch with nitrate of silver, or, if this be too slow, to put on nitric or sulphuric acid, which penetrate more deeply, and sometimes too deeply, injuring joints or making indelible scars. Other methods are to touch with a mixture of 1 part of muriatic acid and 3 of muriated tincture of iron; with a solution of diacetate of lead; with corrosive sublimate, muriate of ammonia, and alum solutions; with muriate of soda and vinegar; with lime water; or with various vegetable juices, as those of the garlic, onion, and sumach.

Poultices of scraped carrots and the application of quicklime will sometimes cause their fall; and rubbing with chalk or a fine file is a favorite means of removal. The nature of warts is not very well understood, and empirical remedies or none at all appear in many cases as efficient as the most scientifically selected.

WART HOG, a name given to the African swine of the genus *phacochœrus* (F. Cuv.), from the large warty protuberances on each cheek. In this genus the feet are 4-toed; there is a thick callosity in front of each fore limb, produced by their habit of falling on their knees when digging for the bulbs and roots on which they feed; the warts are about $1\frac{1}{2}$ inches below the eyes, made up of fibrous tissue mixed with fat; the eyes are very small and high up, ears large, and sense of smell acute; there are 13 dorsal and 6 lumbar vertebræ; tail naked and slender, tapering, but dilated and tufted at the end; the molar teeth vary, according to age, from 3 to 5 on each side in each jaw, and are composed of closely set cylindrical tubes surrounded by enamel, the last being very long; canines large, projecting upward and outward; incisors $\frac{2}{6}$ or $\frac{2}{4}$, deciduous. The length is between $3\frac{1}{2}$ and 4 feet, with a tail of 1 foot; though of small size, they have a large head with formidable tusks, and a very fierce and unprepossessing look. The mammæ are 4, 2 inguinal and 2 abdominal, an inch behind the navel; the roof of the mouth has more than 20 transverse arched ridges; the intestinal canal is about 8 times the length of the body; the stomach is more simple than in the common hog, the small intestines relatively shorter, and the large relatively longer; the pharynx has 2 large mucous pouches. They are fond of fighting, and drop on the fore knees for the purpose. The Ethiopian wart hog of southern Africa, the *valke vark* of the Cape colonists (*Ph. Æthiopicus*, F. Cuv.; *Ph. Pallasii*, Van der Hoeven), is without persistent incisors. A better known species is the African wart hog or *haruja* (*Ph. Æliani*, Rüpp.), from Abyssinia, and the Guinea and Mozambique coasts; it has persistent incisors, with scanty long bristles of a light brown color, and a mane between the ears extending along the neck and back, sometimes 10 inches long.—In the allied genus *potamochœrus* (Gray), or water hogs, the ears are elongated, tapering, ending in a pencil of hairs; the face is elongated, and is rendered hideous by a long protuberance on each side, half way between the nose and eyes; tail thick, high up the rump; upper part of intermaxillary bones swollen and rough; upper canines large, arising from a prominent bony case on the side of the jaws, and curved upward. The masked water hog, or *bosch vark* (*Pot. Africanus*, Gray), is generally black, with whitish cheeks having a large central black spot; it is an inhabitant of S. Africa, and a very savage and ill-looking animal. The painted pig of the Camaroons (*Pot. penicillatus*, Schinz), from the Gold coast of W. Africa, is bright red bay, with black face, forehead, and ears. The white-fronted water hog (*Pot. albifrons*, Du Chaillu) is also bright red bay, but has a white face; it is found in W. Africa, and may be a variety of one of the above.—All these hogs are hunted for their flesh, and often by means of dogs, which are frequently wounded and sometimes killed by the infuriated animals. Most of the modern travellers in southern and central Africa speak of the habits, appearance, and method of hunting these animals, and especially Mr. Andersson in his "Okavango River" (1861).

WARTBURG, an old castle situated in the N. W. part of the Thuringian forest, near the city of Eisenach in the grand duchy of Saxe-Weimar. The site of the castle is extremely picturesque, and the edifice itself was built probably between 1070 and 1080, and remained until 1247 the constant residence of the landgraves of Thuringia. That country came in 1264 into the hands of Henry the Illustrious, and he bequeathed it to his son Albert, who made his residence in the Wartburg, as did his successors until 1406. After this time the castle underwent many changes, and it has been the scene of several events of historic importance. In it Luther was confined, after returning from the diet of Worms, from May 4, 1521, to March 6, 1522; and in this "island of Patmos," as he called it, he wrote several treatises and began the translation of the Bible. The chamber which he inhabited is still pointed out, and ink spots were once shown on the plaster walls, marking the spot where the inkstand struck when he threw it, according to tradition, at the head of the devil. The plaster has now been scraped away by visitors, who have also carried off his bedstead and chair by pieces. In another part of the castle is an armory, in which are several fine suits of armor of the middle ages. A complete restoration of the castle has been begun by the present grand duke, and it now promises to be one of the finest princely residences in Germany.—The Wartburg war is the name given to a great poetic contest which took place in 1206 or 1207, when the minnesingers assembled at the Wartburg for a trial of their skill before Hermann I., landgrave of Thuringia. The poem descriptive of the contest was entitled *Kriec von Wartburg*, and appeared about 1300. It is a singular, wild, and inharmonious composition, divided into two parts, and its authorship is unknown.—The Wartburg festival was a celebration held at the castle by German students on Oct. 18, 1817, in the third centenary year of the reformation. Several hundred students from 12 universities were present, and here the colors of the student societies were displayed for the first time. The participators in the festival were suspected of an intention of introducing republicanism into Germany, and after the assassination of Kotzebue a large number of them were arrested and imprisoned, and not long afterward all participation in the student societies was forbidden by the authorities.

WARTON, Joseph, an English poet and critic, born in Dunsford, Surrey, in 1722, died in Wickham, Feb. 23, 1800. His father was professor of poetry at Oxford. He was educated at Winchester school and at Oriel college, Oxford, and became a curate. In 1746 he published a volume of poems under the title of "Odes on Various Subjects" (4to., London); in 1748 was presented by the duke of Bolton to the rectory of Winslade; and in 1751 accompanied that nobleman on a tour to the south of France. His patron, according to Dr. Wooll, Warton's biographer, had two reasons for desiring his company: "the society of a man of learning and taste, and the accommodation of a Protestant clergyman, who immediately on the death of the duchess, then in a confirmed dropsy, could marry him to the lady with whom he lived, and who was universally known and distinguished by the name of Polly Peachum." The duchess, however, living longer than was expected, Warton returned to England before she died; and on asking for permission to return after her death, he discovered that the duke had been married by another clergyman. Before this time he had published occasional poems, and having made a translation of the Eclogues and Georgics of Virgil, added to it Christopher Pitt's version of the Æneid, and published the whole in 1753 (4 vols. 8vo.). Three essays on pastoral, epic, and didactic poetry, which accompanied the work, gave Warton considerable celebrity. Soon afterward he contributed 24 critical papers to the "Adventurer." In 1754 he was made rector of Tunworth, and in 1755 second master of Winchester school. In 1756 he published anonymously the first volume of his "Essay on the Writings and Genius of Pope," of which the second did not appear till 1782. This work is the one upon which the author's reputation chiefly rests, though at the time it gave great offence to the admirers of Pope, and was not very successful. From 1766 to 1793 he was head master of Winchester school, in 1782 was made a prebendary of St. Paul's, and in 1788 of Winchester. His edition of Pope's works (9 vols. 8vo.) appeared in 1797, and about the same time he began an edition of Dryden, of which 2 volumes were finished. His poetry is of a commonplace character. An account of his life, with selections from his poems and literary correspondence, was published by Wooll under the title of "Biographical Memoirs of the late Rev. Joseph Warton, D.D." (4to., London, 1806).—Thomas, a poet and critic, younger brother of the preceding, born in Basingstoke in 1728, died in Oxford, May 21, 1790. In May, 1743, he became a commoner of Trinity college, Cambridge, and in 1745 contributed to "Dodsley's Museum" a song and a prize essay. His poem on "The Pleasures of Melancholy," written the same year, was published in 1747. Mason having written a poem called "Isis, an Elegy," in which the Jacobite feeling then very prevalent at Oxford was severely attacked, Warton in 1749 published a successful answer under the title of "The Triumph of Isis, occasioned by Isis, an Elegy." In 1751 he became a fellow of Trinity, and in that college spent the remainder of his life, in the course of which he received one or two minor ecclesiastical preferments. After publishing several miscellaneous poems, including "The Progress of Discontent" and "Newmarket, a Satire," he brought out in 1754 his "Observations on the Faerie Queene of Spenser," which gave him a high reputation as a critic. He was elected professor of poetry in 1757, and filled that office with great ability during the 10 years to which the time of holding it is limited. Among the lectures which he delivered was his dissertation *De Poesi Bucolica Græcorum*, subsequently enlarged and prefixed to his edition of Theocritus (2 vols. 4to., 1770). In 1757 he published a selection of Roman inscriptions under the title of *Inscriptionum Romanarum Metricarum Delectus* (4to., London, 1758), 4 of which, numbered 41, 44, 45, and 47, were really written by himself, though asserted to have been sent to him from Italy. To Dr. Johnson's "Idler" he contributed Nos. 33, 93, and 96. Among his remaining works are: "The Life and Literary Remains of Ralph Bathurst, M.D." (1761); "The Oxford Sausage, or Select Pieces written by the most celebrated Wits of the University of Oxford" (1764); an edition of the Greek anthology (1766); "The Life of Sir Thomas Pope, Founder of Trinity College, Oxford" (1772); and his great work, "The History of English Poetry, from the close of the Eleventh to the commencement of the Eighteenth Century, to which are prefixed two Dissertations: 1, on the Origin of Romantic Fiction in Europe; 2, on the Introduction of Learning into England" (vol. i., 1774; ii., 1778; iii., 1781; the fourth and concluding volume was never completed). This work was violently attacked on its first appearance by Ritson, but in spite of some errors it has still maintained its ground as an accurate history of English poetical literature down to the reign of Elizabeth, where it stops. The best edition is that of Richard Price, in which many of Warton's mistakes are corrected (4 vols. 8vo., London, 1824; new ed., 3 vols., 1840). During the controversy in regard to the genuineness of the Rowley poems, he wrote "An Inquiry into the Authenticity of the Poems attributed to Thomas Rowley, in which the Arguments of the Dean of Exeter and Mr. Bryant are examined" (8vo., London, 1782), taking Tyrwhitt's ground that the poems were the work of Chatterton. In 1785 he was elected Camden professor of ancient history, on the resignation of Scott, afterward Lord Stowell, and the same year succeeded Whitehead as poet laureate. In that year also he superintended an edition of "Poems upon several Occasions, English, Italian, and Latin, with Translations by John Milton," which was his last literary work. In 1802 Dr. Mant, bishop of Down, published an edition of "The Poetical Works of the late

Thomas Warton, B.D." (2 vols. 8vo., Oxford), with an account of his life and writings.

WARVILLE, Brissot de. See Brissot.

WARWICK, a S. E. co. of Virginia, situated on the peninsula between the York and James rivers, its W. border washed by the latter, and drained by several small streams; area, 95 sq. m.; pop. in 1860, 1,740, of whom 1,019 were slaves. The surface is undulating, and the soil very fertile. The productions in 1850 were 10,252 bushels of wheat, 61,340 of Indian corn, and 2,218 lbs. of wool. There were 2 churches, and 58 pupils attending public schools. The value of real estate in 1856 was $435,202, an increase of 40 per cent. since 1850. Oysters are taken in the James river and exported in large numbers, and an active trade is carried on in firewood. Capital, Warwick.

WARWICK, a township of Kent co., R. I., 10 m. S. by W. from Providence, bordering on Narraganset bay and intersected by the Stonington and Providence railroad; pop. in 1860, 8,916. In the town are several villages engaged in manufactures, the principal of which are Natick, Phœnix, Centreville, Arctic, and Crompton. Apponaug, at the head of an arm of Narraganset bay, formerly had considerable coasting trade. Drum rock, near this village, is a large rock so nicely balanced upon another that a boy can set it in motion, producing a drum-like noise which can be heard for several miles. There are in the town 21 cotton mills, 2 woollen mills, 2 bleacheries, and 2 calico works, 2 banks, a newspaper office, 15 churches, and 20 public and private schools. It is one of the oldest towns in the state, having been settled previous to 1642.

WARWICK, or Warwickshire, a midland county of England, bounded by the counties of Derby, Leicester, Northampton, Oxford, Gloucester, Worcester, and Stafford; area, 881 sq. m.; pop. in 1861, 561,728. With the exception of two ridges of low hills which skirt the S. border of the county, and among which is Edge hill, famous for the first battle in the civil war of Charles I., the surface consists chiefly of a succession of gentle eminences and intervening vales. The prevailing geological formations are oolite in the S., and elsewhere lias, red marl, new red sandstone, and marlstone, with one considerable coal field. The soil is of very various qualities, but generally good. Timber is abundant, especially in the centre of the county, which was once occupied by the forest of Arden. A large part of the land is devoted to grazing. The only navigable river is the Avon, but ample intercommunication is afforded by canals and railways. Warwick is largely interested in manufactures, including the important industrial city of Coventry and borough of Birmingham. Among the other towns are Stratford-upon-Avon, Kenilworth, Leamington Priors, and Rugby.—Warwick, the county town, and a parliamentary and municipal borough, is situated on the right bank of the Avon, here crossed by a stone bridge, 105 m. from London by the London and north-western railway; pop. of the borough in 1861, 10,589. It is an ancient place, and contains one of the finest feudal castles in the kingdom. One of the towers, 128 feet high, dates from the latter part of the 14th century; another, 147 feet high, is still older, but of uncertain date. The castle contains some valuable paintings and a collection of armor. St. Mary's church is another ancient and very interesting edifice. The town has manufactures of some importance, and returns two members to parliament.

WARWICK, Guy, earl of, a legendary English champion, supposed to have flourished in the time of the Saxon king Athelstan, though his existence at any period is exceedingly problematical. Mr. Ellis, in his "Specimens of Early English Metrical Romances," suggests that an Icelandic warrior named Egil, who contributed very materially to Athelstan's victory over the Danes at Brunanburgh, "may have been transformed by some Norman monk into the pious and amorous Guy of Warwick." Dugdale goes so far as to fix the date of his combat with the Danish giant Colbrand in the year 926, when Guy as he supposes was in his 67th year. The romance of "Sir Guy," which Chaucer mentions in the "Canterbury Tales" as a "romance of price," cannot be traced with certainty further back than the early part of the 14th century, though it is evidently founded upon Anglo-Norman materials. It was printed in its metrical form by William Copland before 1567, and there is a prose French romance of Sir Guy printed in 1525; according to Mr. Ellis, indeed, the story was written in French as early as the 13th century and translated in the beginning of the 14th.

WARWICK, John Dudley, earl of. See Dudley.

WARWICK, Richard Neville, earl of, surnamed "the king-maker," eldest son of Richard Neville, earl of Salisbury, born probably soon after 1420, killed at the battle of Barnet, April 14, 1471. He married in his father's lifetime Anne, daughter of Richard de Beauchamp, earl of Warwick. She succeeded to the great estates of the Warwick family in 1449, and her husband, previously known as Lord Richard Neville, was thereupon created earl of Warwick. Through his parents and uncles he was also allied to several of the most powerful families in the kingdom, among others to Richard, duke of York, the husband of his father's sister and father of the earl of March, afterward King Edward IV. Edward and Warwick were therefore first cousins. He possessed enormous wealth, and added to personal intrepidity, decision, intelligence, and eloquence, a frank and generous bearing and a princely magnificence and liberality which conciliated the affections of all classes. He first distinguished himself as a soldier in an incursion with his father and the earl of Northumberland across the Scottish border in 1448. When the Yorkists took up arms against the house of Lancaster in 1455, he joined the duke of York, had the principal credit of the victory of St. Albans, May 22, and was rewarded with the important post of governor of Calais, to which Henry VI. added a few years afterward the command of the fleet for a period of 5 years. In May, 1458, he attacked a fleet of 28 sail belonging to the Hanse town of Lübeck, and captured 6 of them after a battle of 6 hours. The wars of the roses broke out afresh in the following year, and Warwick came over from Calais with a large body of troops and joined his father at Ludlow about the end of September. The triumph of the Lancastrians at the battle of Ludiford cost him his naval office, and he would have lost the governorship of Calais too, had he not held it by force and driven away his appointed successor at the mouth of his cannon. Collecting a fresh army, he crossed over to England with 1,500 men in June, 1460, and marched upon London. King Henry fled; 40,000 soldiers flocked to Warwick's standards; the city threw open its gates; and the great victory of Northampton, July 10, delivered the royal person into the hands of the Yorkists. It was now arranged that Henry should retain the crown for life, and the duke of York should succeed him. But Queen Margaret was not disposed to yield so easily, and collecting an army gave battle to the Yorkists at Wakefield, Dec. 30. York was slain; Warwick's father, the earl of Salisbury, was taken prisoner and beheaded. The discomfited troops made another stand under Warwick at Bernard's Heath, near St. Albans, Feb. 17, 1461, and suffered another defeat. Henry was set at liberty, but the party of the white rose had now fixed their hopes upon the young Edward of York, who effected a junction with his cousin Warwick's forces and compelled the royal army to retire to the north of England. Warwick and Edward entered London in triumph, and the young duke was proclaimed king, March 4, under the title of Edward IV. Hastening to the north, whither Edward soon followed him, Warwick signally defeated Henry at Towton, March 29. The contest was still prolonged, however, less by the feeble efforts of Henry than by the indomitable spirit of his queen. With assistance from France, Brittany, and Scotland, she returned to England in 1462, and got possession of the fortresses of Bamborough, Dunstanburgh, and Alnwick; but Warwick soon recaptured these strongholds, and Margaret, after losing part of her ships and all her treasures by shipwreck, escaped with her son to Lorraine. Henry with a few Scots and exiles attempted to carry on the war, but, worsted by Warwick's brother, Lord Montacute, he took refuge among the Lancastrians of Lancashire and Westmoreland. After lurking more than a year in concealment, he was betrayed in June, 1465, and carried a prisoner to London. Warwick met him at Islington, tied his feet to the stirrups, and after leading him thrice around the pillory conducted him to the tower. The Neville family meanwhile had governed the new king and the kingdom. Warwick himself, beside being chief minister and general, was warden of the west marches, chamberlain, and governor of Calais, the most lucrative office in the gift of the crown; and of his two younger brothers, George was archbishop of York and lord high chancellor, and Lord Montacute had received the wardenship of the east marches of Scotland, the earldom of Northumberland, and the confiscated estates of the Percys. The royal favors however now began to flow in another channel. Edward had married in 1464 Elizabeth Woodville (or Widville), the widow of Sir John Grey. The queen's father was created Earl Rivers and made treasurer of England and lord high constable, and the Woodvilles soon supplanted the Nevilles in the confidence of the king, who was perhaps only too eager to be released from the tutelage of his old favorite. The royal marriage itself had given Warwick great offence; the marriage of Margaret, the king's sister, to Charles, duke of Burgundy, gave still more; and Edward was equally displeased by the secret marriage in 1469 of his brother Clarence to Warwick's daughter Isabella. Just at this time an insurrection broke out among the peasants of Yorkshire, ostensibly to resist an obnoxious tax. The Nevilles, if not the instigators of it, were not slow to seize the opportunity to overthrow their rivals. The tax was soon forgotten, and the insurgents rallied at the name of Warwick to demand the removal of those "seducious persons" who poisoned the king's counsels. Warwick, Clarence, and the archbishop of York were summoned to the king's assistance, but they came at the head of the disaffected, defeated part of the royal forces, captured and beheaded the father and brother of the queen, and led Edward prisoner to Middleham, where he was held in custody by the archbishop (1469). The Lancastrians immediately raised the standard of the red rose in Scotland, but Warwick defeated them. Soon afterward Edward, released from his prison by some mysterious means, reappeared in London to the astonishment of the kingdom, pardoned Warwick and Clarence, and restored them apparently to his confidence. Another quarrel and another reconciliation however shortly followed; and when an insurrection broke out in Lincolnshire in 1470, Warwick and Clarence, though they accepted the king's commission to subdue it, were secretly the instigators of the whole movement, their design being to place the crown on Clarence's head. They soon threw off disguise, and, when hard pressed by the royal forces, escaped from Dartmouth on shipboard with many followers, and landed at Harfleur. In France they were received with open arms. Here Warwick met his old enemy Queen Margaret, with whom, by the influence of Louis XI., he was reconciled, and, to the great disgust of Clarence, arranged a plan for restoring Henry VI. to his throne, Clarence being guaranteed the next succession, in default of male issue to Henry. Louis furnished the means for the expedition, and Edward having been decoyed into the north by a pretended insurrection, the exiles landed at Plymouth and Dartmouth, Sept. 13, 1470, proclaimed Henry king, and marched upon the capital amid the rejoicings of the people. Edward fled to Holland without striking a blow; Henry was taken from the tower, and washed and clothed (Warkworth's "Chronicle"), and the Nevilles were reinstated in their offices and honors, Warwick receiving in addition the post of lord high admiral. In the mean time Edward had received secret aid from the duke of Burgundy, and, spreading sail at Flushing, landed on the English coast with 2,000 well armed Englishmen, March 14, 1471. Clarence, with whom he had long had a secret understanding, came over to his side; he entered London without resistance, and the archbishop there delivered to him the person of the imbecile Henry. Two days afterward he left the city, to attack Warwick at Barnet. He reached the field on the night of April 13, and between 4 and 5 o'clock on the following morning, which was Easter day, began the attack. Enveloped in a thick mist, the two armies fought at random for 3 hours, Edward victorious on the right, Warwick on the left. The field soon became a scene of hopeless confusion, the Lancastrians falling upon their own men as they returned from pursuing the enemy. Edward at last became master of the day after 7,000 of his adversaries had lost their lives, Warwick and his brother Montacute being slain fighting on foot. Their bodies were exposed naked for 3 days on the pavement of St. Paul's, and then buried with the ashes of their ancestors in the abbey of Bisham.

WARWICKSHIRE. See Warwick.

WASCO, a N. co. of Oregon, bordering on Washington territory, from which it is separated by the Columbia river, and drained by Fall or Des Chutes river and its branches and John Day's river; area, about 3,600 sq. m.; pop. in 1860, 1,689. The Cascade mountains occupy a large portion of the W. and N. W. part, and the other portions have a diversified surface. The soil of the valleys is extremely fertile. The Columbia river is navigable along the border.

WASECA, a new S. co. of Minnesota, intersected by Lester river, an affluent of the Blue Earth river; area, about 450 sq. m.; pop. in 1860, 2,601. The surface is undulating, diversified by prairie and woodland, and the soil is fertile. Capital, Wilton.

WASHINGTON, an organized territory belonging to the United States, and occupying the N. W. corner of its domain. It lies between lat. 45° and 49° N. and long. 110° and 125° W., and is bounded N. by British Columbia, E. by the territories of Dacotah and Nebraska, S. by those of Utah and Nevada and the state of Oregon, and W. by Oregon and the Pacific ocean. The boundary line, starting from the intersection of the 49th parallel with the shore of the gulf of Georgia, runs due E. to the summit of the Rocky mountains, the line of which it follows generally S. E. to lat. 43°, long. 110°; thence due S. to lat. 42°; thence due W. to a point due S. of the mouth of the Owhyhee river, long. 117°; thence N. to the mouth of that river, and with the Snake river to the point where the stream is crossed by the 46th parallel; with that parallel W. to the Columbia, and with that river to the ocean; with the shore of the ocean N. to the straits of Fuca; thence E. with the shore of the straits and N. E. through the middle of the channel of the gulf of Georgia to the place of beginning. There is a dispute between the United States and Great Britain about the boundary in the gulf of Georgia. The American government claims that the "channel" meant by the treaty of 1846 is the channel then chiefly if not exclusively used by shipping, namely, the westernmost channel; whereas the British government claims that Rosario channel, E. of the islands of San Juan or Bellevue, Orcus, and Lopez, and several others of minor importance, is the boundary. The total amount of land in dispute is about 120,000 acres, valuable for tillage, and perhaps for the protection or prevention of smuggling, but of no use for military or legitimate commercial purposes. The territory is 550 m. from E. to W. in lat. 48°, 480 m. from N. to S. in long. 114°, and 840 m. across from the N. W. to the S. E. corner. Area, about 200,000 sq. m.; pop. in 1860, 11,594, of whom 426 were civilized Indians, and 8,446 were males and 3,148 were females. The wild Indians are variously estimated at 10,000 to 30,000. There are 22 organized counties, viz.: Chehalis, Clallam, Clark, Cowlitz, Island, Jefferson, King, Kitsap, Klickatat, Lewis, Missoula, Pacific, Pierce, Suwamish, Shoshonee, Skamania, Snohomish, Spokane, Thurston, Wahkiacum, Walla Walla, and Whatcom. Olympia, the seat of the territorial government, is situated at the head of Puget sound, and in the centre of the western district of the territory; pop. about 1,000. The site is on gently sloping land, which in 1849 was covered with a dense forest of very large evergreen trees, the roots and trunks of which are still seen in the streets and lots of the town. All the land adjacent is still covered with a similar forest. The houses are built of wood. Large vessels lie about 2 miles from the town, the sound in front of it being very shallow at low tide. Two miles from Olympia, at the falls of the Des Chutes river, is the town of Tumwater, which contains 200 inhabitants, and has the best site for a manufacturing town in the vicinity of Puget sound. The river within a distance of half a mile falls 75 feet, and furnishes power to drive a large number of mills. The town has 3 saw mills and 2 grist mills. Vancouver, with a population of 1,200, is situated on the N. bank of the Columbia river, very near the old trading post of the Hudson's bay company and the United States military post of the same name. The site is a beautiful grassy slope, rising gently from the river. Steilacoom, on the E. bank of Puget sound, about 30 m. from the capital of the territory, has a population of 300. Seattle, 40 m. to the northward, on the same side of the sound, has 200 inhabitants. Port Townsend (as the people of the territory write and spell the name, though it is printed "Port Townshend" on the government's maps and charts) lies on the W. trunk of Puget sound, which is the name given popularly in the territory to the sheet of water called Admiralty inlet in the charts. Port Townsend has a population of about 150 persons, is the site of the only custom house in the territory, and has a military post in its vicinity. These places, small as they now are, promise to become towns of importance in the future. They are all west of the Cascade mountains, and their prosperity has been and will be dependent upon commerce, agriculture, and manufactures; while in the E. part of the territory a number of mining towns, some of them scarcely a year old, have sprung up and already surpassed their more aged rivals. Walla Walla, 300 m. from the mouth of the Columbia river and 30 m. S. E. from the junction of the Snake and Columbia, is the chief trading point of the new gold mines discovered and opened in 1861 in the basins of the Salmon and Clearwater rivers. Walla Walla has now a population of 1,000 persons, nearly all men, and nearly all of them dwelling in rude huts which would be deserted very soon if trade should prove unprofitable. In the vicinity of the town is a military post, called New Fort Walla Walla to distinguish it from Old Fort Walla Walla, which stood on the bank of the Columbia at the mouth of Snake river. Lewiston, 75 m. N. E. from Walla Walla, on the E. bank of Snake river near the mouth of the Clearwater, is a new town, 40 m. from the Clearwater or Nez Percés mines. At a distance of 87 m. from Lewiston, on the bank of Oro Fino creek, is Oro Fino City, the chief mining camp and central point of the Nez Percés gold mines; the dwellings are rude cabins, huts, and tents; the population is about 300. Elk City, 50 m. S. E. from Oro Fino City, on the bank of the S. fork of the Clearwater river, is the second mining town in size in the Nez-Percés mines; pop. 150. Florence City, 150 m. E. S. E. from Lewiston, is the chief town of the Salmon river placers, and has about 200 inhabitants. A multitude of other little mining camps have lately arisen in the Nez-Percés and Salmon river placers.—Among the rivers of Washington, the Columbia has the first place. It is a large stream where it enters the territory from British America, and after running about 400 m. in a southward direction, but making great bends, it turns westward, and from Walla Walla 300 m. to the ocean it forms part of the southern boundary of the territory. The general width below Walla Walla is from a quarter to half a mile, and above Walla Walla nearly a quarter of a mile. West of the Cascade mountains the current is gentle, the banks are high and covered with dense evergreen forests, and the scenery is grand. East of the Cascade mountains the current is swift, the banks are bare and rocky, and the scenery is desolate. Ocean steamers can ascend at low water to the "Cascades," a town built at a point where there is a fall in the river, 132 m. from the ocean. At the Dalles, 50 m. E. from the Cascades, there is another fall, and another interruption of navigation. From the Dalles to Walla Walla, 120 m., the river is in some places so swift that steamboats have great difficulty in making headway against the current. There is now no regular navigation above Walla Walla, but steamers have run up to Priest's rapids, 60 m. further; and a steamer was in 1860 used above those rapids. The river is navigable, with occasional interruptions by rapids, to Colville, between lat. 48° and 49°; but the stream is so swift in many places, its bends so great, fuel so scarce and dear, the adjacent country so sterile, and the population so scanty, that probably many years will elapse before steamers will run regularly and frequently up and down. Snake (or Lewis's) river rises in the S. E. corner of the territory, and after a course of about 800 m., all of it within the limits of Washington, save for 150 m., where it serves as a boundary on the Oregon side, falls into the Columbia near Walla Walla. During the last 500 m. of its length it gains very little in size, running through a dry and desolate country. In many places it is deep enough for navigation, and steamers have ascended it to Lewiston, 100 m. from its mouth. Clark's river (called also the Flat Head or Pend d'Oreille river), the next branch of the Columbia in size, rises in the N. E. part of Washington, and after a course of about 600 m., all within the limits of the territory, has its mouth near lat. 49°. McGillivray's or Flat Bow river rises and has its mouth in British Columbia, but 200 m. of its course are in Washington. Among the noteworthy tributaries of the Snake are the Salmon, the Clearwater (styled Kooskooske on some maps), and the Pelouse. The distance from the mouth of the Snake to that of Clark's river is 300 m., in which distance no stream worthy of note save the Spokane, and that not a large river, enters the Columbia from the E. The Okinagan, an outlet of Lake Okinagan, runs into the Columbia from British America. The main streams running from the E. slope of the Cascade mountains to the Columbia are the Yakima and Wenatchee, whose valleys are so far chiefly notable for their auriferous deposits and hostile Indians. The Klickatat river, fed by the snows of Mt. Adams, runs southward, and has its mouth near the Dalles. West of the Cascade mountains, the Cathlapootl and Cowlitz rivers are the only streams of note entering the Columbia. The Nisqually, Puyallup, White, Green, Cedar, Snoqualmie, Squamish, Stolukwamish, and Skaget rivers pour down immense bodies of water from the W. slopes of the Cascade range to Puget sound and the gulf of Georgia. The Skaget river rises N. E. of Mt. Baker, and after running round the E., S., and W. bases of the mountain becomes a very large river, and might be navigated by large vessels, were it not for a bar at its mouth and rafts of driftwood which have become fastened between its banks. None of the other streams flowing into Puget sound are navigable, unless very near their mouths in tidewater. The rivers running westward to the Pacific are the Willopah, which has its mouth in Shoalwater bay; the Chehalis, which falls into Gray's harbor; the Quiniult, and some other streams near Cape Flattery, of which little is known. The Chehalis has been navigated by schooners for 25 m. from its mouth.—Washington possesses a great multitude of harbors, perhaps more than any other country of equal extent on the globe. Puget sound, which has an average width of 2 m., never less than 1 nor more than 4, and a depth never less than 8 fathoms, runs 100 m. inland in a southward direction from the straits of Fuca; and Hood's canal, 12 m. further W., with half the width, runs in the same general direction about 60 m. These two great estuaries or arms of tidewater have depth sufficient for the largest vessels, and numerous bends and corners where the most perfect protection may be found against the winds. Capt. Wilkes, in the report of his exploring expedition, says: "I venture nothing in saying there is no country in the world that possesses waters equal to these." Between the mouth of Puget sound (lat. 48°) and lat. 49° there are a number of islands and bays which supply harbors almost numberless. Bellingham bay deserves special mention. The tide rises 20 feet. On the shore of the straits of Fuca, 80 m. from Cape Flattery, is New Dungeness, which has a secure anchorage and room for a large fleet. To the E. 7 m. is Port Discovery, which is 7 m. long, 1½ wide, and 27 fathoms deep, with excellent protection against the winds. Its great depth makes it inconvenient for anchorage. An island in the middle of the mouth of the harbor offers an excellent site for a fort that will completely command the entrance. It has been proposed that a navy yard should be established here. Gray's harbor, in lat. 46° 55′, has a mouth 4 m. wide, and in shape resembles an equilateral triangle 12 m. long on each side. The entrance is 2½ fathoms deep at low water, with a surf extending entirely across the mouth. Inside there is secure anchorage, though the greater part of the bay is shallow. Shoalwater bay, the mouth of which is in lat. 46° 40′, is about 6 m. wide and 25 m. long, extending down to within 3 m. of the waters of the Columbia river. The entrance has the same depth and surf as Gray's harbor, and much of the bay is bare at low water. The appearance of the land between Shoalwater bay and the Columbia seems to indicate that the river in some remote age found its way to the ocean through the present mouth of the bay.—Washington has no islands in the Pacific ocean, but a multitude in the gulf of Georgia and in Puget sound and near its mouth. Among those in the gulf of Georgia are San Juan, Lopez, Orcus, Shaw, Blakely, Lummi, Cypress, Fidalgo, Waldron, and Stewart islands. At the mouth of Puget sound are Whidbey's and Camano islands. In the sound are Bainbridge, Vashon's, Maury's, Fox, McNiel, Anderson's, and Hartstene's islands.—There are many lakes in Washington. Quiniult lake, about 40 m. S. E. from Cape Flattery, is 6 m. long by 3 wide. Whatcom lake, 2 m. from Bellingham bay, is of the same size. Samish lake, 2 m. S. of Whatcom lake, is nearly as large. Dwamish lake, 3 m. E. of the town and harbor of Seattle, is 18 m. long and 3 wide. Sammamish lake, 5 m. further E., is 5 m. long and 2 wide. Kipowsin, Owhap, Kantz, Shaaf, and Tanwux lakes are in a cluster 35 m. eastward from Olympia. Toutle lake, nearly round and 3 m. in diameter, is 12 m. from the mouth of the Cowlitz river. High up in the Cascade monntains, in lat. 47° 25′, are Lakes Nahchess and Kitchelus, each 5 m. long and 2 wide, both drained by the Yakima river. Not far from Lake Nahchess is Lake Kleattam, about as large as the other two jointly. Lake Chelaw, E. of the Cascade mountains, and 100 m. distant from Port Townsend, is 35 m. long, 3 wide, and has a great depth of water. Its outlet into the Columbia is 2 m. long, and in that distance the water falls 250 feet. In the N. E. corner of the territory, at the foot of the Rocky mountains, is Flat Head lake, 20 m. long and 6 wide. Clark's river, 100 m. from its mouth, spreads out into a lake 6 m. in diameter, called Pend d'Oreille lake. The Spokane river, about 75 m. from its mouth, widens out into Cœur d'Alêne lake, 6 m. in diameter.—There are three main ranges of mountains in Washington, portions of ranges which are also observed in other parts of the continent: the Coast, Cascade, and Rocky mountains. The Coast range extends from Cape San Lucas to the straits of Fuca. Near the Columbia river the range is low or imperceptible, but W. of Hood's canal it rises in wide and high ridges called the Olympian mountains, in some places 8,000 feet high. The Cascade range, a continuation of the Sierra Nevada of California, is in Washington 6,000 feet high, and runs parallel with the coast, 100 m. distant from it. The ridge is a very important one, for it divides the territory, and indeed the coast for a distance of 15 degrees, into districts entirely different from each other in climate, soil, geological character, and vegetable and animal productions. Four high snow peaks rise in the range. Mt. Baker, in lat. 48° 45′, is 11,900 feet high, and an active volcano. It frequently emits black smoke, and sometimes shows a light at night, but no eruption of lava has been observed by white men. Mt. Rainier (formerly spelled Regnier), in lat. 46° 40′, is

12,330 feet high, has two summits about 4 m. apart, and is an extinct volcano. Mt. St. Helen's, in lat. 46° 20′, is 9,550 feet high, and almost extinct as a volcano; the only sign of fire in its bosom is a thin stream of white steam-like smoke which ascends from its summit almost constantly. Mt. Adams, 40 m. eastward from St. Helen's, is 9,000 feet high, and is an extinct volcano. In the Rocky mountains, along the eastern boundary of the territory, there are many high peaks, the most remarkable of which is Fremont's peak, in lat. 43°, 13,570 feet high. About 40 m. to the westward of this peak are three peaks called the Three Tetons; and 80 m. further W. are the Three Buttes. Many spurs of the Rocky mountains run down into the territory, among the most important of which are the Salmon River mountains.—Most of the tillable land of Washington is west of the Cascade range, although that district represents only about one eighth of the area of the territory. The soil E. of the Cascade is thin, sterile, stony, and dry; and its unfitness for cultivation is shown by the scantiness and low character of the vegetation. Deciduous trees, especially such as delight in a rich soil, and luxuriant shrubbery, are seen in but few places; and there are districts where the traveller may go hundreds of miles without seeing a tree save stunted pines, or a bush save the desert-loving wild sage. This is the general character of the eastern part of the territory, but there are exceptional spots. Walla Walla valley has a rich soil; Mill creek valley, near Fort Colville, yields good crops; and in the basins of the Clearwater and Salmon rivers there are fertile tracts, that will at no distant day be subjected to the plough. The soil about Puget sound is mostly fertile, in some places very rich, in others sandy and gravelly. The vicinity of Seattle is said to have the best soil, that of Steilacoom the most gravelly. The greater part of the western district is covered with dense evergreen forests, which require vast labor in clearing. Near Olympia are found deep beds of muck made by the decomposition of vegetable matter, valuable for manure.—West of the Cascade mountains the tertiary sandstone prevails. About Puget sound it is covered by a very deep deposit of alluvium, in some places 100 feet deep. Lignite or tertiary coal is found in many places; at Bellingham bay there is a mine which supplies large quantities of it to commerce. In the Olympian, Cascade, and Rocky mountains, granite is the predominant rock. Near Mt. Adams there is a large field of lava. East of the Cascade mountains the rocks are chiefly igneous and metamorphic. Trap is very abundant, and in many places there are wide plains covered with volcanic scoriæ. Small specimens of placer gold have been found in various little streams flowing from the Olympian mountains and in the Skaget river; and rich diggings have been found on the banks and bars of the Wenatchee, Yakima, Okinagan, Columbia, Clark, Salmon, and Clearwater rivers. Gold is found along the Columbia from lat. 47° to 49°, but there has been very little mining there because of the difficulty of getting at the bars. Miners have on several occasions undertaken to work in the placers of the Yakima and Wenatchee, but have been driven away by the Indians. The diggings along Clark's river, called the Colville mines, have been regularly worked every year since 1855. The placers in the basins of the Salmon and Clearwater rivers were discovered in 1861, and very little is known of them yet. The mines of these two streams may be considered as one district, extending from lat. 45° 30′ to 47°, and from long. 114° to 116°. The general character of the gold found in the Clearwater placers or Nez Percés mines, as they are called from the fact that they are within the limits of a reservation set apart for the Nez Percés Indians, is fine—that is, the metal is found in small particles; while the Salmon river gold is coarse. No auriferous quartz veins have been found in the basin of either river. The placers are found near the surface, and the gold is obtained by washing the dirt in sluices or long troughs, as in California. Some hill diggings have been found, but nearly all the mining as yet is done in the beds, bars, and banks of small streams.—The western district of Washington has a climate exactly like that of England in temperature. The average temperature of the different months of the year is as follows: January, 38°; February, 40°; March, 42°; April, 48°; May, 55°; June, 60°; July, 64°; August, 63°; September, 57°; October, 52°; November, 45°; December, 39°. The mean temperature for the year is 50°. The climate is very wet. Rain, sleet, and fog prevail during a large part of the year. The average amount of water falling annually is 53 inches, against 43 inches in New York, and 22 in San Francisco. East of the Cascade mountains, the annual fall of rain, except near the Rocky mountains, is not one fourth so much as about Puget sound. The winters are very cold, and the summers very hot.—The largest, most abundant, and most valuable trees of Washington are the red fir (*abies Douglasii*) and yellow fir (*abies grandis*), which grow to be about 300 feet high and 6 or 8 feet in diameter. They are used to a great extent for industrial purposes, such as building houses and ships, planking streets in California, and furnishing spars for shipping. The vegetation of the territory and its indigenous quadrupeds and birds aro the same as those of Oregon. The waters of Washington abound in fish, and when the Pacific coast of this continent shall have become densely populated Puget sound will have great fisheries. Salmon, of which there are a dozen species, are abundant in all the streams. Halibut abounds in the straits of Fuca. There are two species of fish called cod, but they are not the true cod of the Atlantic, nor do they belong to the same genus, though they bear some resemblance to it, and are valuable for food. Herrings and sardines enter Puget sound in great shoals. Sturgeon and smelt are also abundant. About 20 m. off the mouth of the straits of Fuca there is a bank where cod and halibut might be caught to advantage. The climate of Washington is too moist to preserve fish by drying, so that they can only be cured by means of salt. Clams abound in Puget sound, and oysters in Shoalwater bay.—The chief natural curiosities of the territory are its high snow peaks and extinct volcanoes, the sublime scenery on the Columbia river, the falls of the river at the Dalles and the Cascades, and the Grande Coulée, a deep chasm running across the large bend of the river below the mouth of the Spokane, and supposed by some persons to be the remains of an ancient bed.—The main industry of Washington is, or until very lately has been, the cutting and sawing of timber for exportation. About 20,000,000 feet, board measure, is exported annually. There are steam saw mills at Teekalet and Seabeck on the banks of Hood's canal, and at Port Madison, Port Ludlow, Port Orchard, Seattle, and Miller's on Puget sound, and 11 water mills on the banks of the sound. The Teekalet mill can saw 40,000 feet in a day; and several of these mills are among the largest and best of their kind in the world. The mills on Puget sound and Hood's canal have a capacity to produce 40,000,000 feet in a year. Next to lumbering comes farming. The territory does not produce more than grain enough for its own consumption. The climate is too moist and cool for maize, peaches, melons, and sweet potatoes; but wheat, oats, Irish potatoes, and apples do well. The fern and sorrel trouble the farmers greatly. The territory has no manufactures, not even a woollen mill. It is impossible now to say what will be the importance of the gold placers found in the valleys of the Salmon and Clearwater rivers, but if all the men who have already gone thither remain there and find profitable employment in digging gold, mining will soon be the principal industry of the country. The chief present annual exports of Washington territory may be set down at 20,000,000 feet of lumber, 500 barrels of salted fish, 1,000 bushels of oysters, and some Bellingham bay coal. The territory has no railroad or canal, and wagon roads are few. The federal government has nearly completed a military road from Vancouver on the Columbia river to Bellingham bay. The government cut a road from Steilacoom across the Cascade mountains by the Nahchess pass in lat. 47° 15′, and is now engaged in opening a road from Walla Walla to Fort Benton on the Missouri river. There is no federal fortification, arsenal, or navy yard in Washington. There is a U. S. marine hospital at Port Townsend, and there are small military posts at the same place, at Steilacoom, Gray's harbor, Vancouver, Walla Walla, Simcoe, and Colville. The territory has few important public institutions, and no important public buildings. The capitol building in Olympia is of wood; the territorial prison is in Vancouver. There is a school called a college in Olympia, and there are numerous common schools. Olympia, Steilacoom, Port Townsend, and Vancouver have each a weekly newspaper. The taxable property of the territory, according to the assessors' returns, is $3,300,000.—The settlers along Puget sound, especially those engaged in lumbering, are mostly natives of the New England states, and went to the territory by sea. Those in the central, southern, and eastern districts are generally natives of the western states, whence they went overland. At French Prairie, near the bend of the Cowlitz river, and in Mill creek valley, there are a number of Canadian Frenchmen, who were formerly hunters, trappers, and employees of the Hudson's bay company. Many of them have married Indian wives. Within 20 years nearly or quite 20,000 Indians had their homes on the banks of Puget sound and Hood's canal; but the white settlers have made war upon them, and strong liquor and hereditary and infectious diseases have proved still more destructive than open war and private quarrel. It is doubtful whether 5,000 now remain. The tribes, which a few years since were separated by animosities and diversities of language, customs, and traditions, have lost much of their distinctive character; many of them have disappeared entirely, the individual members having either died out, migrated to new homes, or fused with the remnants of other tribes. Similar processes of extinction have been at work in many parts of the United States, but nowhere with so much rapidity, and with such fair opportunities for observing all their stages, as in the American states on the Pacific. The principal tribes now existing in the western part of the territory are the Clalms (or Clallams), on the shore of the straits of Fuca; the Quiniults, in the basin of the Quiniult river, which runs S. W. from the Olympian mountains; the Cape Flattery Indians; the Chehalis Indians, who reside along the stream of that name and about Gray's harbor; the Shoalwater bay Indians; the Squamish, Nisqually, Snoqualmie, Stolukwamish, and Skaget tribes; and the Bellingham bay Indians. Most of the tribes which still preserve distinct names are called from the streams in the basins of which they live, and in many cases the streams were named from the adjacent tribes. East of the Cascade mountains, the red men living by the chase have always been more warlike and hardy than their fish-eating relatives of the west, and, having had less intercourse with the whites, have suffered less in numbers, in health, in morals, and in their ancient customs, languages, and tribal distinctions. The principal tribes in the eastern part of the territory are the Nez Percés, Snakes, Yakimas, Pelouses, Klickatats, Bannacks (Pannacks, Bawnacks, Bonacks, or Bonnacks, as their name is variously spelled), Wenatches, Okinagans, Snakes or Shoshonees, Spokanes, Pend d'Oreilles, and Cœur d'Alênes. The Nez Percés and some of the Spokane Indians near Colville have permanent dwellings—cabins or lodges made of skins—and cultivate large fields of grain. All the tribes have firearms and horses, some of them large herds. Hereditary slavery is common among the Indians in the western district, and the proximity of the white men does not seem to have had much effect upon it, otherwise than by decreasing the number of both masters and slaves. It is the custom among most of the tribes owning slaves to flatten the heads of the freemen as a sign of their honorable social position; and an Indian with a round head is looked upon as an ill-favored fellow, and considered a slave or a freedman. The great chiefs have often two or three wives. Polygamy and slavery also prevail among many of the tribes in the basin of the Columbia.—It is supposed that the first white man who saw the land of what is now Washington territory was a Greek called Juan de Fuca (though that was not his baptismal name) in 1592. He was in charge of a Spanish vessel sent out to fortify the supposititious strait of Anian, to prevent the English from passing through it from the Atlantic to the Pacific. Fuca reported having found a strait between lat. 47° and 48°, but he made no fortifications. This was just after the English cast off the Roman Catholic faith, declared the grants of possessions in the new world to be void, and aspired to an equal share with Spain in the trade and domain of the newly discovered lands and seas. It was nearly 200 years before Washington was seen again. In 1775 Heceta, a Spanish navigator, examined the coast between lat. 47° and 48° for the strait reported by Fuca, but could not find it. Three years later Cook made a similar vain search. In 1787 Berkeley, an Englishman, saw the strait, and reported it to his countryman Meares, who entered it the next year and called it after Fuca, whose story had then fallen into great discredit. Gray's harbor was discovered by Capt. Gray, an American, in 1791, and the next year he entered the Columbia river, and named it after his ship. In this year also Vancouver visited the coast of Washington, and gave the first clear and accurate account of the straits of Fuca and Puget sound. The first white men who saw the interior of the territory were Lewis and Clark, sent out on an exploring expedition during the administration of President Jefferson. A few roving white hunters and trappers were found along the shores of the Columbia about 1820, but the first settlements were made about 1828, by the Hudson's bay company, which established posts at Vancouver, Okinagan, and Colville. In 1841 the Puget sound agricultural company (composed of members of the Hudson's bay company, which was restricted by its license to trading) took possession of two farms, one between the Nisqually and Puyallup rivers, and another at the bend of the Cowlitz river, and began to grow grain and breed cattle, mainly for the purpose of supplying the fur company. Before the establishment of these farms some French Canadians settled on French prairie, and engaged in farming. The first American settlers made their appearance in 1845, and since then there has been a slow but regular increase of population. Many of the remarks about the history of Oregon will also apply to this territory, which was a part of Oregon until March, 1853, when it was organized as a separate territory, its southern boundary being then the Columbia river and lat. 46°. When Oregon was admitted as a state, Feb. 14, 1859, one third of its area at the east was cut off and attached to Washington territory. In 1854 a survey was made to find a route for a northern Pacific railroad, to terminate on the bank of Puget sound. Gov. Stevens, who was at the head of the survey, reported in favor of taking the road through the Nahchess pass, and making the terminus at Seattle. In 1855 the whites were engaged in a war with the Indians, and the industry of the territory suffered severely, though very few lives were lost in battle. The war of 1855 was in Washington felt chiefly west of the Cascade mountains. In 1858 a war broke out east of that chain. The Pelouse, Klickatat, Spokane, Okinagan, Cayuse, and some of the Cœur d'Alêne Indians formed a league and commenced the war by driving the settlers from the Walla Walla valley. After three encounters in which the whites were defeated, and one in which they were finally victorious, a peace was made, and it is still observed. In 1858 the excitement in California about the Fraser river mines attracted 15,000 persons to the territory, many of whom landed at Port Townsend, and others at Whatcom; and the latter place had for a few weeks a large population and a busy trade, but it soon sunk back into its former obscurity. The donation law passed by congress in 1850 to make gifts of land to early settlers in Oregon, continued in force in Washington until 1855, and 800 claims were taken up under it.

WASHINGTON, the name of counties in 28 states and territories of the American Union. I. The extreme S. E. co. of Me., separated from New Brunswick by the St. Croix river, bounded S. by the Atlantic ocean, and drained by the Schoodic and East and West Machias rivers; area, about 2,700 sq. m.; pop. in 1860, 42,535. The surface is undulating and the soil in the interior fertile. The productions in 1850 were 37,710 bushels of oats, 144,183 of potatoes, 401,508 lbs. of butter, 35,252 of wool, and 20,942 tons of hay. There were 12 grist mills, 120 saw and planing mills, 19 shingle mills, 28 ship yards, 8 tanneries, 46 churches, 3 newspaper offices, and 12,946 pupils attending public schools. The county contains numerous lakes, the principal of which are the Schoodic, Big, Bascaukegun, and Grand. It has a sea coast of nearly 50 m., indented with numerous bays and inlets, which afford excellent harbors. Passamaquoddy bay is on the S. E. border. The Calais and Baring and the Machias railroads are partly within the county. Capital, Machias. II. A

N. co. of Vt., drained by Onion river and its tributaries; area, 580 sq. m.; pop. in 1860, 27,614. The surface is very much broken, and in some parts mountainous. Most of the county lies between the E. and W. ranges of the Green mountains. The productions in 1850 were 10,569 bushels of wheat, 133,477 of Indian corn, 208,554 of oats, 446,551 of potatoes, 970,368 lbs. of butter, 437,476 of cheese, 765,429 of maple sugar, 153,843 of wool, and 54,959 tons of hay. There were 4 woollen factories, 3 iron founderies, 3 grist mills, 18 saw mills, 5 tanneries, 42 churches, 6 newspaper offices, and 7,466 pupils attending public schools. The county is intersected by the Vermont central railroad. Capital, Montpelier. III. A S. co. of R. I., bordering on Conn., bounded E. by Narraganset bay and S. by the Atlantic ocean, and drained by Charles river and its tributaries; area, 367 sq. m.; pop. in 1860, 18,715. The surface is uneven, and the soil fertile and well adapted to pasturage. The productions in 1850 were 142,581 bushels of Indian corn, 56,339 of oats, 154,012 of potatoes, 162,449 lbs. of butter, and 16,041 tons of hay. There were 22 cotton factories, 24 woollen factories, 5 machine shops, 2 grist mills, 8 saw mills, 4 shingle factories, 5 tanneries, 44 churches, and 3,277 pupils in public schools. The county contains 2 or 3 small lakes, and has a number of excellent harbors. It is intersected by the Providence and Stonington railroad. Capital, South Kingston. IV. An E. co. of N. Y., bordering on Vt., from which it is in part separated by Lake Champlain, bounded W. partly by the Hudson river and Lake George, and drained by Pawlet and Poultney rivers and numerous large creeks; area, 850 sq. m.; pop. in 1860, 45,909. The surface is mountainous in the N. and moderately hilly in the S., and the soil in some parts is fertile. The productions in 1855 were 32,241 bushels of wheat, 589,678 of Indian corn, 798,321 of oats, 121,967 of rye, 767,285 of potatoes, 189,103 of apples, 23,003 of flax seed, 839,420 lbs. of flax, 1,625,138 of butter, 634,491 of cheese, 330,866 of wool, and 69,881 tons of hay. There were 15 grist mills, 49 saw mills, 5 furnaces, 2 iron founderies, 3 paper mills, 8 woollen factories, 13 tanneries, 95 churches, 9 newspaper offices, and 16,292 pupils attending public schools. Iron ore, slate, marble, water limestone, marl, lead, and copper are found. The county is traversed by the Champlain canal, and the Saratoga and Whitehall and the Rutland and Washington railroads. Capitals, Salem and Sandy Hill. V. A S. W. co. of Penn., bounded W. by Va. and E. by the Monongahela river; area, 888 sq. m.; pop. in 1860 46,804. It has a hilly surface, and a rich limestone soil in the hilly portions, and a deep black loam in the bottoms. The productions in 1850 were 558,182 bushels of wheat, 804,540 of Indian corn, 855,943 of oats, 860,563 lbs. of butter, 933,167 of wool (the greatest quantity produced by any county in the Union), and 41,269 tons of hay. There were 67 flour and grist mills, 19 saw mills, 2 iron founderies, 19 collieries, 2 glass factories, 25 tanneries, 101 churches, 2 colleges, 4 newspaper offices, and in 1860 12,754 pupils attending public schools. Great attention has been paid to wool growing, and the sheep of this county are of the best quality. Bituminous coal and limestone are very abundant, and iron ore is found. Capital, Washington. VI. A N. W. co. of Md., bordering on Penn., separated from Va. on the S. W. by the Potomac, and intersected by the Antietam, Conecocheague, and Licking creeks; area, 518 sq. m.; pop. in 1860, 31,414, of whom 1,435 were slaves. The surface is very hilly, and the South mountain, a continuation of the Blue ridge, extends along the E. border. The productions in 1850 were 809,093 bushels of wheat, 368,056 of Indian corn, 102,869 of oats, 341,798 lbs. of butter, 35,601 of wool, and 14,860 tons of hay. There were 59 flouring mills, 2 iron founderies, 2 furnaces, 3 woollen factories, 63 churches, 9 newspaper offices, and 3,435 pupils attending public schools. Iron ore, bituminous coal, and limestone are found. The county is traversed by the Chesapeake and Ohio canal, and the Cumberland valley railroad connects Hagerstown, the capital, with Harrisburg, Penn. VII. A S. W. co. of Va., bordering on Tenn., and intersected by the North and South forks of Holston river; area, 520 sq. m.; pop. in 1860, 16,893, of whom 2,547 were slaves. It is traversed by the Iron mountain in the S. E., and Clinch mountain forms the N. W. boundary. The surface is mountainous or hilly, and the soil generally fertile. The productions in 1850 were 69,264 bushels of wheat, 438,900 of Indian corn, 249,674 of oats, 153,044 lbs. of butter, and 42,935 of wool. There were 25 flouring and grist mills, 11 saw mills, 33 churches, 2 newspaper offices, and 1,512 pupils attending public schools. Iron, bituminous coal, gypsum, and limestone are abundant, and there are valuable salt wells, yielding large quantities for exportation. The value of real estate in 1856 was $4,436,095, an increase of 66 per cent. since 1850. The county is intersected by the Virginia and Tennessee railroad. Capital, Abingdon. VIII. An E. co. of N. C., bordering on Albemarle sound; area, 360 sq. m.; pop. in 1860, 6,357, of whom 2,465 were slaves. The surface is level and mostly covered with swamps, which abound in valuable cypress and red cedar timber. Phelps and Pungo lakes occupy the S. E. part. The productions in 1850 were 15,352 bushels of wheat, 218,468 of Indian corn, 44,481 of sweet potatoes, and 1,104 tons of hay. There were 3 grist mills, 6 saw mills, 5 shingle mills, 9 churches, 1 newspaper office, and 1,178 pupils attending public schools. Capital, Plymouth. IX. An E. co. of Ga., bounded S. W. by the Oconee river, and partly on the N. E. by the Ogeechee; area, 760 sq. m.; pop. in 1860, 12,098, of whom 6,532 were slaves. It has a diversified surface and a fertile soil. The productions in 1850 were 446,730 bushels of Indian corn, 11,261 of oats, 112,576 of sweet potatoes, 7,445 bales of cotton, and 4,395 lbs. of rice. There were 31 churches, and 450 pupils attending public schools. Limestone and buhrstone abound. Near the county seat there are several extensive caves, in which have been found a great variety of fossils, the remains of mammoth animals; and opal, jasper, agate, and chalcedony have been found in the vicinity. The county is intersected by the Georgia central railroad. Capital, Sandersville. X. A W. co. of Fla., bordering on the gulf of Mexico, and bounded N. and W. by Choctawhatchee bay and river; area, 1,100 sq. m.; pop. in 1860, 2,154, of whom 472 were slaves. St. Andrew's bay on the S. border forms an excellent harbor. The surface is undulating, and the soil fertile in the interior and poor on the coast. The productions in 1850 were 54,231 bushels of Indian corn, 16,477 of sweet potatoes, 6 hhds. of sugar, 2,330 gallons of molasses, 107 bales of cotton, and 16,820 lbs. of rice. Live oak is abundant, and forms an important article of export. The Choctawhatchee is navigable for steamboats along most of the W. border. Capital, Holmes Valley. XI. A S. W. co. of Ala., bordering on Miss., and bounded E. by the Tombigbee river; area, 940 sq. m.; pop. in 1860, 4,669, of whom 2,494 were slaves. The surface is uneven, and the soil sandy and moderately fertile. The productions in 1850 were 101,483 bushels of Indian corn, 25,339 of sweet potatoes, 988 bales of cotton, and 44,300 lbs. of rice. The Mobile and Ohio railroad crosses the S. W. part of the county. Capital, Old Washington. XII. A W. co. of Miss., separated from Ark. by the Mississippi river, bounded E. partly by the Yazoo river, and intersected by Sunflower river, Steel's bayou, and Deer creek; area, 1,220 sq. m.; pop. in 1860, 15,679, of whom 14,467 were slaves. The surface is level, liable to inundations, and interspersed with small lakes and ponds, and the soil is highly fertile. The productions in 1850 were 424,600 bushels of Indian corn, 22,315 of sweet potatoes, and 26,178 bales of cotton. Capital, Greenville. XIII. A S. E. parish of La., bounded N. and E. by Miss. (separated from it on the E. by Pearl river), and W. by the Tangipaha, and intersected by Bogue Chitto creek; area, 936 sq. m.; pop. in 1860, 4,708, of whom 1,690 were slaves. The surface is generally undulating, and the soil sandy and moderately fertile. The productions in 1850 were 69,790 bushels of Indian corn, 693 bales of cotton, and 159,750 lbs. of rice. There were 9 churches, and 500 pupils attending public schools. Capital, Franklinton. XIV. A S. E. co. of Texas, bounded N. by Yegua creek, and E. by the Brazos river; area, 940 sq. m.; pop. in 1860, 15,215, of whom 7,941 were slaves. The surface is undulating and the soil generally a deep and fertile loam. The productions in 1850 were 161,743 bushels of Indian corn, 23,999 of sweet potatoes, 101,300 lbs. of butter, 4,008 bales of cotton, and 9 hhds. of sugar. There were 5 churches, 2 newspaper offices, and 355 pupils attending schools. Live oak and red cedar are abundant. Capital, Brenham. XV. A N. W. co. of Ark., bordering on the Indian territory, and drained by the head streams of White and Illinois rivers; area, 870 sq. m.; pop. in 1860, 14,673, of whom 1,493 were slaves. The surface is diversified, and the soil fertile. The productions in 1850 were 557,757 bushels of Indian corn, 34,472 of wheat, 136,086 of oats, 20,273 of sweet potatoes, 103,496 lbs. of butter, and 19,987 of tobacco. There were 14 churches, and 1,031 pupils attending schools. Cattle and swine are extensively raised and exported. Capital, Fayetteville. XVI. A N. E. co. of Tenn., bounded N. E. by the Watauga river, intersected by the Nolichucky river, and separated from N. C. by Bald mountain; area, 590 sq. m.; pop. in 1860, 14,846, of whom 952 were slaves. The surface is diversified by mountains and valleys, and the soil of the latter is highly fertile. The productions in 1850 were 96,967 bushels of wheat, 395,742 of Indian corn, 201,568 of oats, 151,030 lbs. of butter, and 4,265 tons of hay. There were 25 grist mills, 23 saw mills, 14 tanneries, 15 churches, and 1,625 pupils attending public schools. Iron ore is abundant, and bituminous coal is found. The county is intersected by the East Tennessee and Virginia railroad. Capital, Jonesborough. XVII. A central co. of Ky., bounded N. W. by Chaplain's fork of Salt river; area, about 550 sq. m.; pop. in 1860, 11,575, of whom 2,822 were slaves. It has an undulating surface and a fertile soil resting on a limestone formation. The productions in 1850 were 28,653 bushels of wheat, 824,924 of Indian corn, 117,651 of oats, 12,500 lbs. of tobacco, 34,639 of wool, and 212 tons of hemp. There were 30 grist mills, 14 saw mills, 22 churches, and 1,325 pupils attending public schools. Hemp, cattle, and pork are exported largely. Capital, Springfield. XVIII. A S.E. co. of Ohio, separated from Va. on the S. E. by the Ohio river, and intersected by the Muskingum and Little Muskingum rivers; area, 713 sq. m.; pop. in 1860, 36,271. It has a diversified surface and a very fertile soil. The productions in 1850 were 79,615 bushels of wheat, 474,464 of Indian corn, 130,433 of oats, 115,151 of potatoes, 314,789 lbs. of butter, 95,066 of wool, 540,392 of tobacco, and 14,201 tons of hay. There were 14 grist mills, 23 saw mills, 8 tanneries, 58 churches, 2 newspaper offices, and 6,008 pupils attending public schools. Iron ore is found, and bituminous coal is very abundant. The Marietta and Cincinnati railroad has its E. terminus at Marietta, the capital. XIX. A S. co. of Ind., bounded on the N. by the Muscatatack river, and drained by Lost river and Great Blue river and its tributaries; area, 510 sq. m.; pop. in 1860, 17,929. The "Knobs" range of hills are in the E. part. The surface is mostly undulating, and the soil very fertile, resting upon a limestone and sandstone formation. The productions in 1850 were 103,262 bushels of wheat, 756,001 of Indian corn, 215,595 of oats, 100,907 lbs. of tobacco, 272,199 of butter, 48,454 of wool, and 6,131 tons of hay. There were 35 grist mills, 14 saw mills, 19 tanneries, 41 churches, 3 newspaper offices, and 2,575 pupils attending public schools. Lost river, in its course through this county, flows for a considerable distance through a subterranean passage. The county is intersected by the New Albany and Salem railroad. Capital, Salem. XX. A S. W. co. of Ill., drained by the Kaskaskia river and Elkhorn, Beaucoup, and Muddy creeks; area, 580 sq. m.; pop. in 1860, 13,731. The surface is level and finely diversified with prairie and woodland, and the soil is in parts very fertile. The productions in 1850 were 12,080 bushels of wheat, 467,690 of Indian corn, 133,268 of oats, and 159,265 lbs. of butter. There were 11 churches, and 1,000 pupils attending public schools. The county is intersected by the Illinois central railroad. Capital, Nashville. XXI. A S. E. co. of Wis., drained by the Milwaukee and Menomonee rivers; area, 432 sq. m.; pop. in 1860, 23,635. There are two or three small lakes. The surface is mostly level, and the soil very fertile. The productions in 1850 were 123,806 bushels of wheat, 34,524 of Indian corn, 102,859 of oats, 123,252 of potatoes, 171,822 lbs. of butter, and 3,261 tons of hay. There were 11 churches, and 1,748 pupils attending public schools. Limestone of an excellent quality for building purposes abounds, and iron is found in some parts. The county is intersected by the Milwaukee and Fond du Lac railroad. Capital, West Bend. XXII. An E. co. of Minn., separated from Wis. on the E. by St. Croix river, and bounded S. by the Mississippi; area, 380 sq. m.; pop. in 1860, 6,123. It has a diversified surface and a fertile soil. There are numerous small lakes. The productions in 1850 were 11,830 bushels of Indian corn, 23,262 of oats, 1,196 of barley, 9,340 of potatoes, and 755 tons of hay. Capital, Stillwater. XXIII. A S. E. co. of Iowa, drained by the Iowa, Skunk, and English rivers; area, 576 sq. m.; pop. in 1860, 14,233. It has a level surface, diversified by prairie and woodland, and the soil is generally very fertile. The productions in 1859 were 56,098 bushels of wheat, 664,215 of Indian corn, 30,948 of potatoes, 249,475 lbs. of butter, 13,387 tons of hay, and 12,669 gallons of sorghum molasses. It is partly traversed by the Oscaloosa division of the Chicago and Rock Island railroad. Capital, Washington. XXIV. A S. E. co. of Mo., bounded N. E. partly by Big river and N. W. partly by the Maramec; area, 870 sq. m.; pop. in 1860, 9,725, of whom 1,028 were slaves. The surface is generally very hilly, and the soil moderately fertile. The productions in 1850 were 30,279 bushels of wheat, 334,348 of Indian corn, 79,112 of oats, and 69,639 lbs. of butter. There were 10 churches, and 1,400 pupils attending public schools. The county is celebrated for its mineral wealth, iron and lead existing in inexhaustible quantities. Iron mountain on the S. E. border is a huge mass of magnetic iron ore, and lead mines are very numerous near the capital. Silver, copper, plumbago, copperas, chalk, and limestone are also found in considerable quantities. The county is intersected by the St. Louis and Iron mountain railroad, a branch of which extends to Potosi, the capital. XXV. A N. co. of Kansas, bordering on Nebraska, and intersected by Little Blue river; area, about 900 sq. m.; pop. in 1860, 383. XXVI. An E. co. of Nebraska territory, bordering on the Missouri river, and drained by Papillon creek; area, about 550 sq. m.; pop. in 1860, 1,249. Capital, De Soto. XXVII. A N. W. co. of Oregon, drained by the Willamette river and its tributaries; area, 700 sq. m.; pop. in 1860, 2,801. It has a diversified surface, and the soil is very fertile. The productions in 1850 were 21,481 bushels of wheat, 3,932 of oats, 8,075 of potatoes, and 26,085 lbs. of butter. Capital, Hillsborough. XXVIII. A S. co. of Utah territory, bounded E. by Colorado territory, S. by Arizona, and W. by Nevada, and intersected by Colorado river; length about 380 m., breadth 30 m.; area, 11,500 sq. m.; pop. in 1860, not returned. It is traversed on the W. by the Wahsatch mountains; the surface is generally much broken, and only a limited portion of the soil is productive. It has been formed out of part of Iron county since 1850.

WASHINGTON, a township and the capital of Washington co., Penn., situated 25 m. S. W. from Pittsburg, on the Hempfield railroad, which connects it with Wheeling; pop. in 1860, about 3,000. It is the seat of Washington college and Washington female seminary. The court house, college, and seminary buildings are all handsome and costly structures. There are 2 iron founderies, a woollen factory, a coach factory, and various other manufacturing establishments, and 11 churches (1 Baptist, 1 Disciples', 1 Episcopal, 1 Lutheran, 4 Methodist, 2 Presbyterian, and 1 Roman Catholic).

WASHINGTON, a city of the District of Columbia, and the capital of the United States of America, situated on the left or N. bank of the Potomac river, between the Anacostia or Eastern branch and Rock creek, which separates it from Georgetown; pop. in 1860, 61,118. The capitol is in lat. 38° 52′ 20″ N., long. 77° 0′ 15″ W. The distances from Washington of the principal cities of the United States are—on the N. and N. E.: Baltimore, 39 m.; Philadelphia, 136; New York, 226; Albany, 376; Boston, 432; and Portland, 542; on the N. W. and W.: Buffalo, 376; Detroit, 526; Milwaukee, 700; Chicago, 763; San Francisco, 2,000; St. Louis, 856; Louisville, 590; Cincinnati, 497; and Pittsburg, 223; and on the S. and S. W.: Richmond, 120; Wilmington, N. C., 416; Charleston, 544; Mobile, 1,033; New Orleans, 1,203; and Nashville, 714. The distance of the city from the mouth of the Potomac is about 160 m., and from the capes of the Chesapeake about 300 m. The river opposite the city is about a mile wide, and just below its width increases considerably. The general altitude of the site is about 40 feet above the river, but it is varied by several irregular elevations of no great height, most of which are occupied by public buildings. Beyond the corporate limits is a circling range of low wooded hills, affording admirable sites for villas and country seats. The city extends from N. W. to S. E. 4½ m., and from N. E. to S. W. 2½ m. The streets run from N. to S. and from E. to W., crossing each other at right angles, and distinguished by letters and numbers, those running N. and S. being numbered, and those running E. and W. being lettered, taking the capitol as a starting point. Their width varies from 90 to 110 feet. There are beside 20 avenues, named after the older states of the Union, which cross the streets at various angles, and connect the most important points of the city, forming at their intersection with the streets and with each other numerous open spaces of irregular shape. The width of the avenues varies from 130 to 160 feet. The capitol commands Maryland, Delaware, New Jersey, Pennsylvania, Maine, and Missouri avenues; the president's house, Pennsylvania, New York, Vermont, and Connecticut avenues. Pennsylvania avenue extends from Georgetown to the Anacostia, a distance of 4 m., and is the main avenue of communication between the capitol and the president's house and the chief offices of government. Between these two great centres of the city, for the distance of a mile and a half, the avenue is well filled with buildings; but few other streets are seen without frequent vacant spaces which are yet to be covered with houses.—Beside the capitol and the president's house, the principal public buildings are the treasury department, the state department, the war department, the navy department, the patent office, the general post office, the national observatory, the arsenal and navy yard, the Smithsonian institution, the Washington monument, and the city hall. The capitol is commandingly situated upon the brow of a plateau in the eastern part of the city, 90 feet above the Potomac. It is surrounded by a beautiful park of 35 acres, containing a great variety of trees both indigenous and foreign. The corner stone of the original edifice was laid by President Washington, Sept. 18, 1793, and the north wing was ready for the first sitting of congress in the new metropolis, Nov. 17, 1800. The south wing was finished in 1811, and the interior of both wings was set on fire and destroyed by the British, Aug. 24, 1814. The reconstruction of the wings was begun in the following year, and the foundation of the main building was laid March 24, 1818, and the whole finally completed in 1825. After the lapse of a quarter of a century the necessity of more and better accommodation was recognized by congress, and an act passed Sept. 30, 1850, provided for the extension of the capitol according to such plan as might be approved by the president. The corner stone of the extension was laid July 4, 1851, by President Fillmore, and an address delivered by Daniel Webster, then secretary of state. It is not yet quite finished (Oct. 1862). The whole edifice fronts the east. The old building, which now forms the centre, is 352 feet 4 inches long and 121 feet 6 inches deep, with a portico 160 feet wide, of 24 columns, with a double façade on the east and a projection of 83 feet on the west, embracing a recessed portico of 10 coupled columns. The extension consists of two wings placed at the N. and S. ends of the central building, at a distance of 44 feet from it, with connecting corridors 56 feet 8 inches wide, inclusive of their outside colonnades. Each wing is 142 feet 8 inches in front on the east by 238 feet 10 inches in depth, exclusive of the porticos and steps. The porticos fronting the east have each 22 monolithic fluted columns, and extend the entire width of the front, having central projections of 10 feet 4 inches, forming double porticos in the centre, the width of the gable. There is also a portico of 10 columns on the W. end of each wing, 105 feet 8 inches wide, projecting 10 feet 6 inches, and like porticos on the N. side of the N. wing and S. side of the S. wing, with a width of 121 feet 4 inches. The entire length of the capitol is 751 feet 4 inches, and the greatest depth, including porticos and steps, is 324 feet. The ground actually covered by the building, exclusive of court yards, is 153,112 feet, or a little over 3½ acres. The walls of the central building are constructed of white sandstone from an island in Aquia creek, Va. The extension is built of fine white marble slightly variegated with blue, from Lee, Mass. The columns are of white marble from Maryland. The principal story of the capitol rests upon a rustic basement, which supports an ordonnance of pilasters rising to the height of the two stories above. Upon these pilasters rest the entablature and beautiful frieze, and the whole is surmounted by a marble balustrade. The main entrances are by the three eastern porticos, which are made easy of access by broad flights of stone steps. But as the principal and most populous part of the city is in the rear of the capitol, the most usual entrances are on that side. From the centre of the capitol rises a cast iron dome, surmounted by a bronze statue of Liberty by Crawford, rising to the height of 300 feet above the basement floor of the building. Exactly in the centre of the capitol is the rotunda, a circular room 96 feet in diameter, and rising to the entire height of the interior of the dome. It is surrounded by an ordonnance of fluted pilasters 30 feet in height. On the walls between the pilasters are 8 paintings on canvas, each 18 feet in length by 12 in height. Four of these by John Trumbull illustrate the declaration of independence, the surrender of Burgoyne, the surrender of Cornwallis, and the resignation of Washington as commander-in-chief of the army in 1783; they are valuable chiefly for the portraits they contain. The remaining four pictures are "The Embarkation of the Pilgrims in the Speedwell at Delft Haven," by Robert W. Weir; "The Landing of Columbus," by

John Vanderlyn; "De Soto's Discovery of the Mississippi," by William H. Powell; and "The Baptism of Pocahontas," by J. G. Chapman. The wall above these paintings is ornamented with panels of arabesque in bass-relief. Four alternate panels contain heads of Columbus, Sir Walter Raleigh, Cabot, and La Salle. In panels over the 4 doors of the rotunda are alto-rilievos in stone: Penn's treaty with the Indians, by M. Gevelot; the landing of the pilgrims at Plymouth, by Causici; the conflict of Daniel Boone with the Indians, by the same artist; and the rescue of Capt. John Smith by Pocahontas, by Capellano. In the centre of the N. wing is the senate chamber, which is of rectangular form, 112 feet long, 82 in width, and 30 in height. The ceiling is of cast iron, deeply panelled with stained glass skylights, and is ornamented in the richest style. The hall is surrounded by galleries capable of seating 1,000 persons. These galleries are reached by magnificent marble staircases, which with the corresponding ones in the S. wing are the most striking architectural features of the whole edifice. Adjoining the senate chamber are the senators' retiring room, reception room, post office, the president's room, and the vice-president's room—superb apartments, with walls and columns of white and red marble, and gorgeously painted and gilded ceilings. The hall of representatives is in the centre of the S. wing, and is larger and more gaudy than the senate chamber. It is 139 feet long, 93 wide, and 30 high, with a gallery affording seats for 1,200 persons. The speaker's room is immediately in the rear of his chair, and, like all the rooms in this wing, is highly decorated with frescoes and paintings. On the staircase leading to the gallery is a large picture in fresco by E. Leutze, representing a group of emigrants crossing the Rocky mountains, and illustrating the westward progress of civilization. The hall formerly occupied by the senate, and now by the supreme court, is situated upon the E. side of the N. wing of the centre building, and is semicircular in shape, 75 feet long by 45 in height. The old hall of representatives is in the S. wing of the centre building, between the rotunda and the present hall of the house, and is the most stately and beautiful apartment in the whole edifice. It is semicircular in form, 95 feet in length and 60 in height. It is intended to be used hereafter as a receptacle for historical paintings and sculptures. The library of congress occupies a fine room 91 feet long, 34 wide, and 39 high, on the west of the rotunda, fronting upon the western park and the city, of which it commands a charming view. The collection now numbers upward of 70,000 volumes, exclusive of documents, which to the number of 80,000 volumes are kept in separate apartments. The tympanum of the central pediment of the capitol is decorated with a group in alto-rilievo representing the genius of America, executed by Persico, and said to have been designed by John Quincy Adams. The northern pediment contains a group by Crawford representing the progress of civilization in the United States. The southern pediment has not yet been filled. Upon the cheek blocks of the steps to the central portico are two groups, that on the S. side by Horatio Greenough, symbolizing the early struggles of the settlers in the wilderness, and that in the corresponding position opposite by Persico, typifying the discovery of America by Columbus. On each side of the eastern entrance to the rotunda there are statues of Peace and War, also by Persico. In the eastern park is a colossal statue in marble of Washington, by Greenough.—The president's mansion, generally called from its color "the White House," is in the western part of the city, and surrounded by the war, navy, treasury, and state departments. It is two stories in height, is built of freestone, and is 170 feet long and 86 deep. The treasury department is on the E. side of the "White House," and is a magnificent building of granite, which when completed will comprise also the state department, and will be 465 feet long by 266 wide, with 4 fronts on as many streets. The building at present occupied by the state department is a small plain structure of brick. The departments of war and the navy also occupy plain brick buildings on the E. side of the president's house. The department of the interior occupies a magnificent marble edifice on the corner of 7th and F streets, in the centre of the business portion of the city. This edifice, which is commonly called the patent office, is in the Doric style, and is 406½ feet long by 275 wide and 75 high. The saloons devoted to the models of patents are altogether 1,300 feet in length. Beside the patent offices, the edifice contains the pension office, and the offices of public lands, of Indian affairs, of the census, and of the agricultural bureau. Opposite the patent office, and separated from it by F street, is the general post office building, a beautiful marble structure in the Italian palatial style, which contains the postmaster-general's department and also the city post office. In that part of the public grounds which extend westward from the capitol to the Potomac river is the large brick edifice of the Smithsonian institution. (See SMITHSONIAN INSTITUTION.) Still further W. in the same grounds is an unfinished monument to Washington, intended to be 600 feet in height, of which about one third was erected when the work was suspended for want of funds. On an open space called the circle, on Pennsylvania avenue near Georgetown, stands an equestrian statue of Washington by Clark Mills, for which congress paid $50,000. A similar statue of Andrew Jackson, by the same artist, stands in the centre of the square in front of the president's mansion.—Washington is supplied with water from the Potomac at Great Falls, 19 miles above the city, by an aqueduct which cost $3,000,000, and discharges 67,596,400 gallons in 24 hours, or nearly 3 times as much as the Croton aqueduct at New

York. A striking feature of Washington is exhibited by the great hotels, which are all on Pennsylvania avenue. The principal of these establishments are Willard's, Brown's, and the national, which are all of great size, and always densely crowded while congress is in session. The churches of Washington are not remarkable for their architecture; they comprise 4 Baptist churches, 5 Episcopal, 1 Friends', 3 Lutheran, 10 Methodist Episcopal, 2 Methodist Protestant, 1 New Jerusalem, 9 Presbyterian, 5 Roman Catholic, 1 Unitarian, 1 Universalist; and for colored congregations, 2 Baptist, 5 Methodist, and 1 Presbyterian. The educational establishments of the city comprise Columbian college, under the control of the Baptists, the buildings of which are near the western boundary; Gonzaga college, a Roman Catholic institution, on F street near 10th street; a system of public schools, and many good private schools and academies. There are three daily newspapers, prominent among which is the "National Intelligencer," whose existence is nearly coeval with that of the city. There are also a few weekly journals, several of which are published on Sunday. Washington is connected with Baltimore by a branch of the Baltimore and Ohio railroad, and with Alexandria, 9 m. distant, by a railroad commencing on the Virginia side of the Potomac. A horse railroad has lately been constructed through Pennsylvania avenue, from the capitol to Georgetown.—Washington was founded in 1790 by the first president of the United States, whose name it bears, and was occupied as the seat of government in 1800. The principal events in its subsequent history was its capture, in Aug. 1814, by a British army led by Gen. Ross, by whom its public edifices were barbarously burned. In 1861 it was threatened by the forces of the confederate states, when it was secured by a strong system of earthworks on both sides of the river, giving to the city the character of a vast intrenched camp. In September, 1862, it was again threatened by the approach of the confederate forces after their repulse of the federal attack under Gen. Pope at Bull run on Aug. 29; and when Gen. McClellan at the head of the principal Union army pursued the confederates in Maryland, he left Gen. Banks (Sept. 7) in command of the forces charged to defend Washington.

WASHINGTON, Bushrod, an American jurist, born in Westmoreland co., Va., in 1759, died in Philadelphia, Nov. 26, 1829. He was the son of John Augustine Washington, a younger brother of George Washington. He was a student at William and Mary college when Virginia was invaded by the British under Cornwallis in the winter of 1780-'81, and volunteered in a troop of horse commanded by Col. J. F. Mercer, continuing in the service till the disbanding of the troop after the battle of Jamestown. He afterward studied law in Philadelphia, was admitted to the bar, and practised successfully in his native county. In 1787 he was elected to the Virginia house of delegates, and the next year was a member of the convention to ratify the constitution of the United States. He afterward resided successively at Alexandria and Richmond, and at the latter place reported the decisions of the supreme court of the state. In 1798 President Adams appointed him one of the judges of the supreme court of the United States. By the will of his uncle Gen. Washington, he became the possessor of the Mount Vernon estate, and during the latter years of his life resided upon it; at his death he bequeathed it to his nephew, the late John Augustine Washington.

WASHINGTON, George, the leader of the American revolution and first president of the United States, born in Westmoreland co., Va., Feb. 22 (11, old style), 1732, died at Mount Vernon, Dec. 14, 1799. The house in which he was born was situated in a parish called by the family name of Washington, near Pope's creek, a small tributary of the Potomac, and at the distance of about half a mile from its junction with that river.[*] It was destroyed by fire during the boyhood of Washington, but the site was indicated a few years since by one of the chimneys which was yet standing; and in 1815 a stone with a suitable inscription was placed on the spot by Mr. George Washington Parke Custis. Having since been ceded to the state of Virginia, it has been enclosed by public authority. The family to which Washington belonged is satisfactorily traced back in England to the 12th century and to the county of Durham. Among the feudal proprietors established in that part of the island shortly after the Norman conquest, was William de Hertburn, so called from his estate, which is presumed to be the modern Hartburn on the Tees. This estate was exchanged by him for that of Wessyngton in the same county. With the acquisition of this new manor, the family name underwent a corresponding change, and gradually passed into that of Washington. From this person, thus designated, the family in its various branches, now widely spread not only in the United States but in England and on the continent of Europe, is descended. A still greater antiquity than that here set down is sometimes claimed for the family. The name of Washington, written Washingatune, is supposed to occur in a charter of Edgar as early as the 10th century.[†] The genealogy of a personage like Washington is certainly a fair subject of antiquarian curiosity, though no individual of our race had less need to borrow honors from his progenitors. He himself, in an answer to a letter of inquiry from Sir Isaac

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[*] In some of the biographies of Washington, including those of Chief Justice Marshall and Mr. Irving, "Bridge's Creek" is stated to have been the place of his birth. This is the name of a small stream nearly parallel to Pope's creek, and like that a tributary of the Potomac. In a diagram of the localities executed for the writer of this article by Mr. John R. Thompson, of Richmond, Va., the homestead of the family is placed between the two streams, nearer to Pope's than to Bridge's creek, and the former is more correctly claimed as the birthplace of Washington.

[†] "Historical Magazine" for March, 1861, p. 70.

Heard, garter king at arms, in 1792, remarked that the descent of his family was a subject to which he had paid very little attention. George Washington was the son of Augustine Washington and his second wife Mary Ball. The first wife was Jane Butler, and of that marriage were born Butler, who died in infancy, Lawrence, Augustine, and Jane, who also died in childhood. The marriage with Mary Ball took place in March, 1730, and of this marriage were born 6 children, viz., George, Betty, Samuel, John Augustine, Charles, and Mildred, of whom the last named died in infancy. His great-grandfather was John Washington, who with a brother named Lawrence emigrated to Virginia about 1657. They were great-grandsons of Lawrence Washington, some time mayor of Northampton, and the first lay proprietor of the manor of Sulgrave in Northamptonshire, which was granted to him in 1538. He married a daughter of Shirley, Earl Ferrars. The elder brother of the emigrants to America married a half sister of Villiers, the all-powerful duke of Buckingham in the reign of James I. A youth named Washington, and very likely a child of this marriage, accompanied Prince Charles and Buckingham as a page in their wild journey to Spain, and died of a fever in Madrid. Another of the name of Washington, a contemporary though not a brother of the emigrants, signalized himself by his persevering gallantry in sustaining the siege of Worcester against the republican forces. Of the two brothers who came to Virginia, Lawrence had studied at Oxford, and John, the immediate ancestor of the general, had resided on an estate at South Cave in Yorkshire; a circumstance which gave rise to an erroneous tradition in this country that the family sprang from that region. Baron Washington, in a letter addressed to Dr. Flügel, the United States consul at Leipsic in 1844, observes that "a branch of the family from unknown causes, for they were wealthy, emigrated about the year 1650 to America." The emigration, as we have seen, took place somewhat later, and was no doubt occasioned by the political state of the times. The family was loyal, and there can be little doubt that the brothers John and Lawrence, like other adherents of the royal cause, were led for this reason to exile themselves to Virginia. That colony was a favorite resort of the cavaliers during the government of Cromwell, as New England had been of the Puritans under Charles I. John Washington, the great-grandfather of the general, has been shown by the Rev. Mr. Simpkinson (in his volume entitled "The Washingtons, a Tale of a Country Parish of the 17th Century") to have been knighted by James I. in 1623, and before his emigration to America to have been married to Mary Curtis, by whom he had three sons. She died before the emigration, and it is not known that any of his sons accompanied him to Virginia. He took up lands with his brother, and they both became successful planters in what is called the northern neck, the district between the Potomac and Rappahannock rivers, distinguished not only as the birthplace of the Washingtons, but of other men of eminence, such as several of the Lees and James Monroe, the fifth president of the United States. There is no tradition that Sir John Washington was called by his title in this country. He appears as a field officer in the Indian wars of the day, and gave his name to the parish in which he lived. He married as a second wife Ann Pope, by whom he had two sons, Lawrence and John, and a daughter. Lawrence married Mildred Warner of the neighboring county of Gloucester, and of this marriage were born John, Augustine, and Mildred. The second son, Augustine, was the father of George Washington. Inasmuch as Sir John Washington was married in England, a fact discovered by Mr. Simpkinson, and had a son of his own name and of middle age at the time of his emigration, that writer conjectures that this son may have accompanied his father to America and have become the husband of Ann Pope. "It is a well known fact," he observes, "among genealogists, that two generations are perpetually confused and merged in one, where the same Christian name is repeated." Should this conjecture be accepted, the descent of Gen. Washington from the emigrant would be carried back one more generation. From the interesting work of Mr. Simpkinson, who is the rector of Brington, Northamptonshire, it appears that about 50 years before the emigration to America, the Washingtons removed to that parish from Sulgrave, in consequence, no doubt, of a matrimonial connection with the Spencers. The name is still seen upon monumental stones in the parish church of Brington, copies of which, presented by Earl Spencer to Mr. Charles Sumner, are now deposited in the state house in Boston. The original grantee of Sulgrave was probably born at Warton in Lancashire. In the next generation after the emigration, James Washington, a member of a different branch of the family, being deeply implicated in the insurrection of Monmouth, escaped to Holland, where the family still exists. A descendant of this branch of the family removed from Holland to Bavaria at the commencement of the present century, where individuals of the name, and somewhat resembling Gen. Washington in personal appearance, were a few years ago, and are perhaps still living. It may be mentioned as a somewhat striking coincidence, to which it is believed attention was first called by the writer of this article, that the families of George Washington and Benjamin Franklin, the former the great military leader of the American revolution, the latter not second to any of his associates in the civil service of the country, were established for several generations in the same central county of Northamptonshire, and within a few miles of each other; the Washingtons at Brington and Sulgrave, belonging to the landed gentry of the county, and in the great civil war supporting the royal cause; the Franklins at the village of Ecton, living upon a farm of 30 acres, and eking out its produce by the earnings of their traditionary occupation of blacksmiths, and espousing, some of them at least, and the father and uncle of Benjamin Franklin among the number, the principles of the nonconformists. The Franklin house at Ecton is still standing, and Mr. Simpkinson thinks he has identified that of the Washingtons at Brington. The respective emigrations, germs of great events in the history of America, took place, that of the great-grandfather of Washington, as we have seen, in 1657 to loyal Virginia, and that of Josiah Franklin, the father of Benjamin, about 1685 to Boston, the capital of Puritan New England.—About the time of George Washington's birth, the manufacture of iron on a greatly enlarged scale was introduced in Virginia by Gov. Spotswood. Indeed, the governor claimed that he was not only "the first in this country (the British colonies), but the first in North America, who had erected a regular furnace. They ran altogether upon bloomaries in New England and Pennsylvania, till his example had made them attempt greater works." Four furnaces were established in different localities, but all near Fredericsburg. Of one of these, called the Principio iron works, apparently the name of a similar establishment on Chesapeake bay belonging to the same proprietors, Augustine Washington became the agent; and his house on Pope's creek having been destroyed by fire, he removed to the neighborhood of the furnace on the north side of the Rappahannock and a short distance below Fredericsburg. Here however he lived but a short time, having died in 1743, when George was in his 12th year. He left a large landed property to his widow and 5 children. To his oldest son Lawrence he gave an estate on the Potomac, afterward so famous as Mount Vernon; George inherited the property on the Rappahannock occupied by the father at the time of his death; a plantation of 600 or 700 acres was bequeathed to each of the other children; while the income of the whole property was given to the mother till the sons respectively should come of age. She continued to reside with the minor children on the estate below Fredericsburg. The mother of Washington was a woman of intelligence and energy, ruling her family and household with a strong hand and a firm will, and not unwilling, it is said, occasionally to share, while she directed, the labors of her servants in the field. The means of education at that period were limited in all the British colonies on this continent, and particularly at the south. Owing to the scantiness of the population, day schools were out of the question, except in a few large towns; there were no boarding academies of note; and Harvard in Massachusetts, Yale in Connecticut, and William and Mary in Virginia were the only colleges. Considering that the father of Washington was a man of wealth, living at no great distance from Williamsburg, it is somewhat remarkable that George was not sent to that seminary. In fact it would have been quite natural, connected as the Washingtons were with families still flourishing in England, that he should have been sent "home," as it was called, to be educated at the schools and universities of the mother country. For whatever reason, his opportunities of education were confined to those of the local schools of the neighborhood, and the instruction which he received at them did not go beyond the primitive branches of reading, writing, and arithmetic, with the addition, which must have been somewhat exceptional, of bookkeeping and surveying. Some of his school books and manuscripts are still preserved. His handwriting was always neat, stiff in youth, but afterward flowing and shapely, retaining its regularity and firmness to the end of his life. He was apt at figures, methodical in keeping accounts, and skilful in the construction of tables and drawing of plans, specimens of which from his school-boy days still remain. Uniform tradition represents him to have attained an early development of physical strength. He is said to have thrown a stone across the Rappahannock opposite his father's residence, a feat which has not since been repeated. He early showed a military taste, and he was the willingly obeyed leader of his comrades in their juvenile battles. He took the lead in all the athletic sports and exercises of his companions. Mr. Custis relates the courage and skill with which, while yet a boy, he mounted and subdued an untamable blood horse. The fierce animal burst a blood vessel and fell dead beneath his fearless rider, who by his frank confession amply atoned to his austere but just mother for the loss which he had occasioned her by this injudicious display of horsemanship. Though no great reliance can be placed upon most of the anecdotes which are related of Washington's boyhood and youth, it is certain that he grew up of a vigorous, and in early life spare and agile frame, capable of much physical endurance, remarkably strong in the arms, and a bold and graceful rider. Nor is there any doubt that he early acquired among his contemporaries that character for justice, veracity, and sterling honor, which he sustained through life. Among his youthful manuscripts still preserved is one which, considered as the work of a boy of 13, is highly remarkable, and which, more than any thing else recorded of his early days, foreshadows a great man. It is entitled "Rules of Civility and Decent Behavior in Company and Conversation," in the form of brief maxims, to the number of 110. Mr. Sparks, in his invaluable edition of the "Works of Washington," has given a specimen of them. It does not appear whether they were copied in a body from some manual of education, or selected and compiled by young Washington from the books read by him, or framed from the oral instructions of his parents and his own youthful observation and reflection. The first supposition is perhaps the most likely. If selected and compiled by a lad of 13, and still more if they were the fruit of his own meditations, they would evince an almost unexampled precocity both of intellect and character. Whether borrowed or composed by him, some of these rules of conduct and morals manifestly controlled his conduct through life. Washington's early instruction, as has been observed, was limited to the ordinary branches of an English education, our own language at that time not being taught grammatically. He paid some attention to the French language after the army of Count de Rochambeau arrived in this country, but never attempted to speak or write it. His orthography was rather defective, a very common fault a century ago. Of important letters he usually made a first draft, and by great care in their preparation and in that of his other compositions, he acquired a correct and perspicuous English style, which did not often aim at ornament, and is wholly free from rhetorical exaggeration. In tracing the lives of men like Washington, it is oftentimes impossible not to refer to an overruling Providence incidents which, in the case of ordinary men, would be thought of no great importance. While Washington was yet at school, a lad of 14 years, he contemplated and had all but taken a step which would have changed his entire career. A military taste seems to have been hereditary in the family. His older brother Lawrence, who after his father's death stood to him *in loco parentis*, held a commission in one of the American regiments which were sent to reënforce the army under Gen. Wentworth and Admiral Vernon, in the unsuccessful expedition against Carthagena in 1740. Several other Virginia gentlemen were in the same expedition, among them Mr. William Fairfax, the near neighbor of Lawrence Washington on the Potomac river, and Mr. Dandridge, a relative no doubt of the lady who afterward became Gen. Washington's wife. Capt. Lawrence Washington and Capt. Murray are named as the commanders of a battalion of Americans who, on March 19, 1740, aided, "with wonderful resolution and success," in the assault of a battery which commanded the entrance of the harbor of Carthagena. While on this expedition Capt. Lawrence Washington formed intimate personal relations with the admiral, who fortunately escaped from that most disastrous expedition against Carthagena without loss of the credit acquired by the capture of Porto Bello. On the return home of Capt. Washington at the close of the war, he gave to his newly occupied residence at Hunting creek the name of Mount Vernon, in honor of the popular naval hero under whom he had served. It was natural that this circumstance should make the naval service of the mother country, its facilities for advancement and opportunities for distinction, a familiar subject of conversation in the family circle. George was a frequent visitor at Mount Vernon, where Mr. Fairfax and other military associates of his brother were also often met by him. He was of an age to have his imagination kindled with the tales of naval prowess and glory constantly repeated in his presence. It is not known whether the idea of entering upon that career originated with himself, or was suggested by his brother and friends. It was certainly approved by them. A midshipman's warrant was obtained for him, probably through the influence of Admiral Vernon, and it is even said that his clothes were packed to go on board ship. His mother alone never cordially approved of the plan. Mr. Sparks quotes a letter from Mr. Jackson, a friend of the family, apparently written from Fredericsburg to Capt. Lawrence Washington at Mount Vernon, in which the writer says: "I am afraid Mrs. Washington will not keep up to her first resolution. She seems to dislike George's going to sea, and says several persons have told her it was a bad scheme. She offers several trifling objections, such as fond unthinking mothers habitually suggest; and I find that one word against his going has more weight than ten for it." She persevered in her opposition, and the project was abandoned. This was unquestionably the turning point in the life and career of Washington. The abandonment of this plan when it was on the point of being consummated, and in consequence of the mother's opposition, may well be ascribed to an overruling Providence. It certainly furnishes no ground for calling the mother a "timid woman," as is done by the venerable Chief Justice Marshall, in alluding to the event. Her opposition was rational in itself, more than justified by the event, and is but another proof of her discernment and firmness of purpose. In fact, Washington is clearly to be added to the list of eminent men whose characters have been greatly moulded by a mother's influence. Tradition has preserved but few traces of the father, and authentic history still fewer. Mr. Custis states that the general had "been heard to say, that he knew but little of his father beyond the remembrance of his person and his parental fondness." The control of the children's property devolved upon the mother by her husband's will shows his confidence in her discretion and energy. Tradition represents her as a woman of vigorous character and masculine will. On the appointment of the general to the command of the army in 1775, he removed his mother to the city of Fredericsburg, as a safer residence in time of war. The modest dwelling in which she passed the rest of her life, one story and a half high, is, with some later additions to it, still standing. Its unpretending character is in striking contrast with the ambitious and half-finished monument which was commenced a few years ago in its neighborhood. Her son's elevation induced no change in her mode of life. During the years of his tutelage, he was trained by her in habits of frugality and industry, to obey rightful authority, and to speak the truth. Books at that time were rare throughout the colonies; few were printed on this side of the Atlantic, and not many imported from England. The range of reading for the uneducated did not extend much beyond manuals of devotion, standard sermons, and books of practical piety. Among the few books belonging to the elder generation of Washingtons which have come down to the present day, is a well worn copy of Sir Matthew Hale's "Contemplations," a volume which had belonged to George Washington's father, and in which the names of his two wives, Jane and Mary, are written, each in her own hand, on the blank page. It would not be difficult to point out, in the character of George Washington, some realization of the rules of Christian life, as laid down by that grave and upright magistrate. It may deserve a passing remark, that though he had not received a college education himself, Washington entertained a decided opinion of its utility. He sent his adopted grandson Custis to Princeton college, and the correspondence between them, first published in Mr. Lossing's valuable edition of "Custis's Recollections," will show that Washington entertained clear and accurate views of the value of academic training. He appropriated the shares in the Potomac and James river canals, presented to him by the legislature of Virginia, to the endowment of collegiate institutions. A national university at the seat of the general government was a favorite object with him, and was recommended by him to congress in his last annual message. He accepted himself the honorary chancellorship of William and Mary college, having first modestly ascertained that no duties were incident to the office which required an academical education on the part of the incumbent.—George Washington had ever been the favorite of his older brother Lawrence, and after leaving school passed much of his time at Mount Vernon, occupied in summer with the usual routine of plantation life, watching the crops and the operations of the farms, hunting, fishing, and visiting; and in the winter season and the studious hours of the year devoted to his favorite branch of surveying, in which he became a great proficient. In his correspondence with his grandson Custis, he speaks of book-keeping and surveying as necessary attainments for a man of fortune, especially a landed proprietor. He also learned fencing and the manual exercise from some of the associates and military dependents of Capt. Washington. The captain had lately married the daughter of Mr. William Fairfax, his brother officer in the Spanish war, and now his near neighbor at Belvoir on the bank of the Potomac. Mr. Fairfax was the near relative of Lord Fairfax, at that time a guest at Belvoir. This eccentric nobleman was the owner of an immense American domain, inherited from his mother, who was the daughter of Lord Culpepper, one of the early colonial governors of Virginia, and the grantee of a tract of land which originally included the whole of the northern neck. The grant was probably intended to be bounded on the west by the Blue ridge, which however had not yet been surveyed. Governor Spotswood appears, about the time of Washington's birth, to have conducted the first party of English settlers who reached that then savage frontier. Grants were frequently made in the American charters of all lands lying between certain rivers, supposed in general to run E. and W. from the mountains to the sea, or even between certain parallels of latitude from ocean to ocean. As the country was explored, Lord Fairfax or his agents discovered that, although the Rappahannock had its head waters in the Blue ridge, the Potomac penetrated that and several other parallel mountain chains. In consequence of this discovery, his estate was construed to include the lower valley of the Shenandoah, and as much more in the north-western region of Virginia as he might choose to claim. By way of confirming his title to this extensive domain, he left the residence of his relative at Belvoir, built a substantial stone dwelling in the valley, which he called Greenway Court, and there lived in a kind of baronial state in the wilderness. Washington, for a reason which will be presently mentioned, was much at Greenway Court, and there is no doubt was greatly benefited by familiar intercourse with a nobleman of education and culture, a student of Oxford, an associate of the men of letters of London, and a reputed contributor to the "Spectator." A disappointment in love is said to have driven him into voluntary exile in Virginia, where he passed his time in watching and promoting the development of the country, following the hounds through the primeval wilderness, and cheering his solitude with books and a limited circle of friends. Another intimacy formed by Washington at this period of his life, and during his protracted visits to Mount Vernon, was that of the son of the proprietor of Belvoir, George William Fairfax, who had married the daughter of Col. Carey of Hampton, and had brought his bride and her sister home to his father's house. Washington, at every period of his life somewhat susceptible, seems to have formed a sentimental attachment to the sister, and to have found solace in her society for his disappointment in another quarter. His boyish manuscripts betray the secret of an unsuccessful passion for a person whom he does not name, but whom he describes in prose and very prosaic verse as a "lowland beauty." Tradition identifies her with Miss Grymes, who afterward married a Col. Lee, and was the mother of Gen. Henry Lee, a distinguished partisan officer of the revolution, at all times a favorite of Washington. But the social relations formed by Washington during his residence at Mount Vernon and his frequent visits at Belvoir were productive of much more serious results, and had an important influence over the events of his future life. The vast estates of Lord Fairfax were as yet unsurveyed, and his choicest lands were falling into the occupation of "squatters." The admirable system of public surveys now prevailing is a fruit of federal legislation under the constitution of the United States. Nothing of the kind was known to the colonies. The only approach to it was the practice of licensing public surveyors, who were employed by the individual proprietor at his own risk. As the metes and bounds, instead of being ascertained by astronomical observation as in the present system, were deduced from natural objects or reference to former surveys, great uncertainty and consequent litigation resulted. The young Washington had made himself a master of the theory of surveying, as taught at school, and his experimental plans of the property at Mount Vernon evinced his capacity for operations in the field. He was accordingly engaged by Lord Fairfax to undertake the survey of a portion of his extensive estates, an arduous employment, and, owing to the proximity of independent Indian tribes, one by no means free from danger. To perils from this cause must be added those which arose from the rough and lawless character of the border population, with whom, especially at that early period and in the entire absence of a strong government, the surveyor was of all visitors the least popular. The following extracts from a little journal kept by Washington on his first surveying tour, made in company with young Mr. Fairfax, will give a pretty accurate idea of the nature of the service. He was then just turned of 16:

> "15 March, 1748. Worked hard till night, and then returned. After supper we were lighted into a room, and I, not being so good a woodsman as the rest, stripped myself very orderly, and went into the bed as they called it, when to my surprise, I found it to be nothing but a little straw matted together, without sheet or any thing else, but only one threadbare blanket, with double its weight of vermin. I was glad to get up and put on my clothes, and lie as my companions did. Had we not been very tired, I am sure we should not have slept much that night. I made a promise to sleep so no more, choosing rather to sleep in the open air before a fire."
>
> "2d of April. A blowing rainy night. Our straw upon which we were lying took fire, but I was luckily preserved by one of our men awaking when it was in a flame. We have run off four lots this day."

One of the letters preserved in the little volume in which this journal is kept, gives a very interesting account of the mode of life on the frontier. The date is uncertain, but it must have been written about the time that the foregoing entries were made in the diary:

> "Dear Richard: The receipt of your kind favor of the 2d instant afforded me unspeakable pleasure, as it convinces me that I am still in the memory of so worthy a friend, a friendship I shall ever be proud of increasing. Yours gave me the more pleasure, as I received it among barbarians and an uncouth set of people. Since you received my letter of October last, I have not slept above three or four nights in a bed, but after walking a good deal all the day, I have lain down before the fire on a little hay, straw, fodder, or bear skin, whichever was to be had, with man, wife, and children, like dogs and cats; and happy is he who gets the berth nearest the fire. Nothing would make it pass off tolerably, but a good reward. A doubloon is my constant gain every day that the weather will permit of my going out, and sometimes six pistoles. The coldness of the weather will not admit of my making a long stay, as the lodging is rather too cold for the time of year. I have never had my clothes off, but have lain and slept on them, except the few nights I have been in Fredericksburgh."

This is one of the earliest letters of Washington that has been preserved. It not only gives us a picture of his life as a surveyor upon the frontier, but it illustrates, in more ways than one, the economical phase of his character and his power of physical endurance. It is not the least noticeable trait of his character, that he should at this early period of his life have commenced the practice of keeping a journal, and of preserving rough drafts of letters of this description. Washington was employed in this way for three years, passing the summers in surveying Lord Fairfax's estates, and the winters principally at Mount Vernon. They were unquestionably three most valuable years of preparation. Passed by most young men of fortune at college, they were passed by him in the wilderness. His body was strengthened by exercise and hardship, his senses and corporeal faculties developed and trained, and the habit of self-reliance formed. The foundations of his fortune, as far as it was derived from his own acquisitions, were probably laid in part by the knowledge gained by actual inspection of the rich lands in western Virginia, of which he afterward became a large proprietor. In the course of his surveying tours he frequently encountered parties of friendly Indians, and became familiar with the manners of the natives of the forest, a knowledge which soon stood him greatly in stead. The very scene of his labors as a surveyor, the north-western frontier of Virginia, became the theatre of those movements and operations which formed the memorable commencement of his military career.—The seven years' war had its origin in the jealousy with which the French government contemplated the projects of the Ohio company, which was formed about this time, and of which Lawrence Washington was an active member. The attention of several of the colonial assemblies, and of that of Virginia among the first, was early called to this subject. In the anticipation of an Indian war, and probably of a rupture with France, the government of that colony commenced military preparations. The province was divided into districts, in one of which Washington, then but 19 years of age, received the appointment of adjutant with the rank of major. He was soon interrupted in the performance of the congenial duties of his new office, by an important event in his domestic life. His brother Lawrence was naturally of a feeble constitution, and his health, never robust, had suffered by the effects of the climate and exposure in the unfortunate expedition to Carthagena. Falling into a decline, he was ordered to the West Indies, and it was determined that his favorite brother George should accompany him. They sailed for Barbados in Sept. 1751, and arrived after a voyage of five weeks. They had scarcely been a fortnight in the island when George was attacked with small pox, in what was called the "natural way." He had the disease severely, but, favored by the mildness of the climate and skilful medical aid, he recovered in about three weeks. He was slightly marked through life. Finding no material relief in Barbados, Lawrence Washington proposed to remove to Bermuda in the spring, and George was sent to America to conduct his sister-in-law to the last named island. He reached Virginia after a most tempestuous voyage; but his brother's health grew rapidly worse, and the proposed removal to Bermuda was abandoned. This was the only occasion on which Gen. Washington ever left the American continent. Lawrence Washington returned to America in the summer of 1752, without having derived material improvement of his health from the voyage. He died shortly after at the age of 34, leaving a large fortune to an infant daughter who did not long survive him. By his will, of which George was one of the executors, the estate of Mount Vernon was, on the demise of the daughter, given to George, who added to it materially by subsequent purchases. Though the youngest of the executors named in the will, owing to his more intimate acquaintance with his brother's affairs, and his prospective interest in the property, the active management of the estate devolved upon him. In the mean time the prospect of a collision on the frontier increased. On the arrival of Dinwiddie as colonial governor, the military establishment was reorganized, and the province was divided into four districts, of which the northern, including several counties, was assigned to Washington as adjutant-general. He engaged in the discharge of his new duties with his accustomed promptness and energy. The struggle of the French and English for the possession of the North American continent was the great event of the 18th century. France intrenched herself at the mouths of the St. Lawrence and the Mississippi, and aimed by a line of posts through the interior to confine the English to the narrow strip occupied by the Anglo-American colonies along the coast. The intervening territory, watered by the Ohio, was debatable ground, claimed by both, but settled as yet by neither—in fact, occupied by Indians and belonging to neither. West of the Mississippi, although some of the English charters ran from sea to sea, and the French province of Louisiana extended indefinitely to the north and west, neither party had penetrated. The Ohio company was bound by the conditions of its grant of 500,000 acres of land to introduce 100 families within 7 years, and to build a fort for the protection of the settlers. The company proceeded to fulfil these conditions. A road across the Alleghany mountains was opened, substantially on the line of the "Cumberland road" of later days, and an agent was sent to conciliate the Indians, who agreed that they would not molest the Virginia settlers south of the Ohio river. Under this arrangement, 12 families headed by Capt. Gist established themselves on the banks of the Monongahela. These movements were watched with jealousy by the French Canadian government. Although the peace of Aix la Chapelle had just been concluded, emissaries were sent to the tribes N. W. of the Ohio, to persuade them to break up the infant settlements of the Ohio company. Some of the Anglo-American traders, it is said, were seized and sent to France. Both parties erected forts, the Virginians in 1754, at the confluence of the Monongahela and Alleghany rivers (the site of Pittsburg), the Canadians somewhat earlier on a branch of French creek about 15 miles S. of Lake Erie. Gov. Dinwiddie, either for the purpose of protesting against these measures of the French, or perhaps of obtaining authentic information of their character, determined to despatch a special messenger to the residence of the French commandant. After others to whom this appointment had been offered had declined it, it was accepted by Major Washington. It was a service by no means free from danger. The distance to be traversed, most of the way through an unsettled wilderness, was between 500 and 600 miles; winter was at hand, and the journey was to be made without military escort, through a territory occupied by Indian tribes that still and long afterward retained the practice of inflicting the most inhuman tortures upon their prisoners. Washington could honestly have pleaded the important trusts committed to him at home as an excuse; but he readily undertook the somewhat perilous mission, and started from Williamsburg Nov. 14, 1753. At Gist's settlement on the Monongahela he was joined by that hardy pioneer. At Logstown he held a conference with Tanacharisson, the chief of the friendly Indians there, who, with two or three others of the tribe, accompanied Washington and Gist, first to Venango and then to the post of the French commandant, M. de St. Pierre, a short distance further north. Having delivered his despatches and received the reply, fearing that the Indians might be induced to intercept his party, he hastened his return. The weary horses were sent by land to Venango, while Washington and his associates descended the river in a canoe. Appearances of hostility thickened at Venango. "I cannot say," Washington remarks in his journal, "that ever in my life I suffered so much anxiety as I did in this affair." Perceiving the danger of a longer sojourn, Washington and Gist started to return through the wilderness on foot, with their packs on their backs and guns in their hands. They were dogged through the woods by Indians in the French interest, one of whom joined them the following day, and offered his services as a guide. He soon treacherously led them off the track, and attempted, by all the arts of Indian cunning, but without success, to induce Washington to give up his gun. At nightfall, perceiving them to be worn out by the day's tramp in the woods, and calculating no doubt that they would be too weary to pursue him, he turned, and at a distance of 15 paces fired at Washington and his friend. They immediately seized him. Gist would have put him to death on the spot, but Washington insisted on sparing him. They accordingly affected to consider the firing of his gun as accidental, and, releasing him at a late hour, pursued their way without halting for rest and without a guide through the long December night. At length they reached the Alleghany river, nearly opposite to the site of the modern city of Pittsburg. They had hoped to cross it on the ice, but unfortunately the river was neither frozen across nor wholly open, but fringed with ice for 50 yards, while the middle of the stream was filled with cakes furiously drifting downward. It could be crossed only on a raft, which, to use Washington's expression, they labored all day, "with one poor hatchet," to construct. They launched it upon the river, but were soon so surrounded by the broken and drifting masses, that they expected every moment that it would go to pieces beneath them. Washington put out his setting pole to stop the raft till the blocks of ice should float by, but was hurled into the river where it was 10 feet deep, and escaped drowning by clinging to a log. Unable to force the raft to either shore, they were obliged to leave it, and passed the night on an island in the middle of the river. Their clothes froze to their bodies. Had the morning found them on the right bank of the river, they would have no doubt been overtaken by the savages. Happily the river froze wholly over in the night, and at dawn they crossed in safety. The cold was so intense that Capt. Gist's feet were frozen; his companion escaped without serious injury. Washington's journal of this perilous expedition was sent by Gov. Dinwiddie to London and published there, and the journal of his companion Gist was contributed a few years ago, by Dr. Mease of Philadelphia, to the collections of the Massachusetts historical society. The former was regarded in London as a document of no little importance for the light which it shed on the designs of the French government with respect to the interior of this continent. The report of Major Washington left no doubt on the mind of Gov. Dinwiddie, that all attempts to extend the settlements toward the Ohio would be forcibly resisted by the Canadian government. He accordingly convened the assembly, and recommended active measures of preparation, at the same time calling the attention of the other colonial governors to the impending danger. Virginia voted to raise a regiment of 6 companies, and one company under Capt. Trent was immediately sent forward to take possession of the point at the confluence of the Alleghany and Monongahela, which Major Washington had especially recommended as the site of a fort. The command of the regiment was given to Col. Fry, and Washington, who had modestly refused to be a candidate for the colonelcy, as a place too arduous for his youth and inexperience, was appointed lieutenant-colonel. He moved forward with a part of the force as soon as it could be got ready to take the field, and the chief command of the regiment before long devolved upon him by the death of Col. Fry. Thus, at the age of 22, and with no experience in the field, he was placed at the head of the force destined to meet the first blow struck in the great seven years' war. The instructions of Gov. Dinwiddie to the commander of the regiment assumed the existence of a state of war, and commanded him "to drive away, kill and destroy, or seize as prisoners all persons, not the subjects of the king of Great Britain, who should attempt to settle or take possession of the lands on the Ohio river or any of its tributaries." Lieut. Col. Washington reached Will's creek, on his way to the Ohio, on April 20. Here he was met by the intelligence that Capt. Trent's party, while engaged in building the fort at the fork of the Ohio, had been fallen upon by an overwhelming force of French and Indians, and compelled to abandon the work they had just commenced. It was immediately taken possession of by the other party, and by them, when completed, called Fort Duquesne, in honor of the governor of Canada. Although it eventually appeared that the reported numbers of the French and Indians were enormously exaggerated, the state of affairs was extremely critical. Col. Washington, however, advanced as rapidly as possible. Having received information from the friendly Indians that a party of French had been out for two days, determined to attack the first body of English they should meet, as a measure of precaution he threw up an intrenchment on the Great Meadows—a "charming field," as he called it, "for an encounter." His old friend and comrade Gist also brought him information that a party of 50 French had been at his settlement the day before, and that he had seen their tracks within 5 miles of the Great Meadows. This information was confirmed during the night by an express from the chief of the friendly Indians. Washington accordingly placed himself at the head of 50 men, and in company with a band of friendly Indians, after a forced and laborious night march, came upon the enemy at an early hour the next morning. The French were completely taken by surprise, and a brief action followed. M. Jumonville, the French commander, and 10 of his men were killed, and the rest of the party, 22 in number, were taken prisoners. On the side of the Virginians, one was killed and 2 or 3 were wounded. One of the Canadians made his escape during the action. The prisoners were marched to the Great Meadows, and thence under guard to Williamsburg. Exaggerated accounts of this occurrence were published in France, and attempts were made to fix on Washington the charge of having assassinated a French officer while employed on a peaceful mission. An epic poem entitled *Jumonville* was written on this theory by Thomas, of which the plot and the incidents are as fabulous as the execution is tame. Considerable reënforcements were raised and advanced as far as Winchester; but, with the exception of an independent company from South Carolina under Capt. Mackay, none of them reached the Great Meadows, where the whole force amounted to less than 400 men. As Col. Washington anticipated after the defeat of Jumonville's party, a strong force was put in motion against him from Fort Duquesne. As a measure of precaution he strengthened the intrenchment at the Meadows, and gave it the name of Fort Necessity. To the other difficulties of his position here was added a claim set up by Capt. Mackay, as an officer holding a royal commission, to take precedence of the provincial colonel. To prevent a collision of authority, Washington advanced with his regiment, leaving Mackay and his company as a guard at the fort. Two weeks were required to force a march of 13 miles, through a gorge of the mountains, to Gist's settlement. Here authentic information was received that the enemy at Fort Duquesne had been strongly reënforced, and might be shortly looked for. Washington having determined to make a stand at the settlement, Capt. Mackay was sent for and promptly brought up his company. It was however decided by a council of war that the enemy was too strong to be resisted, and a retreat to Fort Necessity was deemed expedient. The retrograde movement occupied two days, and they were soon attacked by a greatly superior force of French and Indians. Col. Washington drew up his men at first outside of the fort, where they received for several hours the fire of the French from the cover of the neighboring wood. Later in the day he withdrew his men within the fort, where however they were partially commanded from the enemy's position. At length, at 11 o'clock at night, the French commander proposed a parley. Suspecting this to be a *ruse* to send an officer into the fort in order to obtain information as to its condition, the offer was twice declined by Washington. At length he agreed to send Capt. Van Braam, a Dutch officer who spoke French, to treat for a capitulation with M. de Villers, the French commander. The terms of the capitulation were honorable. The Virginians were to retain every thing in their possession but the artillery, to march out of the fort with the honors of war, and to be allowed to retreat unmolested to the settlements. In the articles of capitulation, as drawn up in French, at midnight, under a drenching rain, and after a contest prolonged for 12 hours, the death of Jumonville was alluded to under the name of *assassinat*, and this was claimed in the report of M. de Villers as an admission of that crime on the part of Washington. In a letter addressed by Washington to a friend who had transmitted to him a copy of this report, he indignantly refutes the insinuation. His words are: "That we were wilfully or ignorantly deceived by our interpreter in regard to the word assassination, I do aver, and will to my dying moment; so will any officer present. The interpreter was a Dutchman, little acquainted with the English tongue, and therefore might not advert to the tone and meaning of the word in English. But whatever his motives were for so doing, certain it is he called it the death or the loss of the sieur Jumonville. So we received and so we understood it, until, to our great surprise and mortification, we found it otherwise in a literal translation." It is a noticeable incident of this painful reverse at the commencement of Washington's military career, that he was compelled to evacuate Fort Necessity on July 4, 1754, a day rendered for ever memorable 22 years later by the declaration of the independence of the United States. Notwithstanding the disastrous termination of the campaign, not the slightest reproach was cast on the youthful commander. That he was able to make honorable terms of capitulation and bring off his little force in safety, notwithstanding the strength of the enemy and the lawless character of their Indian allies, was regarded as proof of energy and fortitude, as well as skill and prudence, equal to the severest trial. The following year formidable preparations, or what were intended to be such, were made by the home government to protect the menaced frontier of their Anglo-American possessions. Two regiments of royal troops were sent out under the veteran Braddock, a brave but headstrong and opiniative officer, with which and the provincials of Virginia the campaign was opened. Washington, disgusted with the precedence enjoyed by the officers of the regular army, threw up his commission, but tendered his services as a volunteer aid to Gen. Braddock, who gladly accepted them. In consequence of a severe illness Col. Washington was left behind at the Great Meadows, where he consented to remain with reluctance, and only on condition that he should be allowed to join the army before an engagement took place. The limits of this article will not permit a detailed account of the memorable event of July 9, 1755, still freshly remembered in American history as Braddock's defeat. Col. Washington, though greatly enfeebled by disease, was almost the only officer of distinction who escaped from the calamities of the day with life and honor. The other aids of Gen. Braddock were disabled early in the action, and Washington alone was left in that capacity on the field. "I expected every moment," said his friend and comrade Dr. Craik, "to see him fall." In a letter written by himself to his brother, he says: "By the all-powerful dispensations of Providence, I have been protected beyond all human probability or expectation; for I had four bullets through my coat and two horses shot under me, yet I escaped unhurt, though death was levelling my companions on every side." His fellow aid, Col. Orme, who was the witness of his conduct, states that he discharged the perilous duties which devolved upon him "with the greatest courage and resolution." A curious anecdote is preserved of a kind which historical criticism accepts with reluctance, but which, according to Mr. Custis, rests on the satisfactory authority of Dr. Craik. This intelligent physician and life-long friend of Washington was accustomed to relate that when they were on a tour together 15 years afterward, to the banks of the Great Kanawha river, they were approached by a band of Indians, whose chief stated that he had come a long distance to see Washington; that it was he who led the hostile Indians at Braddock's defeat; that he aimed at Washington several times with his rifle, and directed his young braves to do the same, but found it impossible to hit him; from which he concluded that he bore a charmed life, and was reserved by the Great Spirit for a very important career. It is quite certain that the public mind was deeply impressed with the courage and conduct of Washington on this memorable occasion, and that the inauspicious result of the conflict, instead of involving him in its sinister associations, seemed by contrast to give him new titles to respect and confidence. Of this the most remarkable evidence is furnished in the celebrated allusion of the Rev. Samuel Davies, afterward president of Princeton college, in a discourse preached before a company of Virginia volunteers. After applauding the patriotic ardor which had been manifested in the colony, he adds: "As a remarkable instance of this, I may point out to the public that heroic youth, Col. Washington, whom I cannot but hope Providence has hitherto preserved in so signal a manner for some important service to his country." A seal of Washington with his initials, probably shot away from his person, was found after a lapse of 80 years on the field of battle, and is now in the possession of a member of his family. No attempt was made by the French to pursue their advantage, but the reverse at Fort Duquesne naturally caused a general alarm in the province. A force of 2,000 men was raised by the assembly, of which the chief command, notwithstanding the recent disasters and the preference of another candidate by the governor, was conferred on Washington. His head-quarters were established at Winchester, and the duty of protecting the frontier devolved upon him till the end of the war. The unfailing embarrassments of such a service, the impatience of a militia force raised by drafting and impressment, unpaid and poorly clad, the frauds of contractors, contradictory and preposterous orders from the governor, whose eagerness of command was in inverse ratio to his knowledge of military affairs, the intrigues of rivals seeking to supplant him by aspersions of his character, the arrogant pretensions of a subordinate, and wholesale desertions on the approach of danger—these were some of the difficulties with which he had to contend for the rest of the war. Vexatious and harassing as they were, they proved the best school of preparation for the revolutionary war, where nearly the same annoyances beset him on a still larger scale, as indeed they have been the fate of every commander-in-chief in every country since war became a profession and a trade. In Feb. 1756, Washington made a hurried visit to Boston, the head-quarters of Gov. Shirley of Massachusetts, who had lately been appointed commander-in-chief of the royal forces in North America. The governor's son was military secretary to Gen. Braddock, and lost his life in the disastrous battle of the preceding summer. The object of Col. Washington's visit was to submit to the governor the question of precedence which had sprung up between the provincial officers and those commissioned by the crown. The question was justly decided in favor of precedence according to seniority. On his way to and from Boston, Washington was the guest of Mr. Beverly Robinson, who had in his younger days been his schoolfellow, and was the brother of the speaker Robinson, by whom a well known compliment was paid to the modesty and courage of Washington. At the house of Mr. Beverly Robinson he became acquainted with his sister-in-law Miss Mary Phillipse, a lady to whose great personal attractions was added that of a large fortune. Tradition represents the gallant young colonel as having fallen in love with the beautiful heiress; but being obliged to return to his post, Col. Morris, his brother aid at Braddock's defeat, became his successful rival and the husband of the lady. Her family adhered to the royal side in the revolutionary contest, and went to England, where the lady is said to have died at a very advanced age in 1825. The years 1756 and 1757 passed without any important military event in the southern department; but the labors and care of his station told upon the strong constitution of Washington, and he was prostrated with a fever for 4 months. In 1758 he held the chief command of the Virginia contingent in the ill-conducted and all but abortive campaign under Gen. Forbes against Fort Duquesne. Nearly all the faults of Braddock's expedition were repeated, and with a narrow escape from the same results. Washington had formed a matrimonial engagement with Mrs. Martha Custis in the summer of 1758, and the following letter, written to her from Raystown, the advanced post of Gen. Forbes's army, is inserted in this place, not only as being probably the only letter extant addressed to that lady before their marriage, but as exhibiting a playfulness of manner, of which scarce any other specimen is to be found in his correspondence. It also gives some details of Grant's surprise not found in the general histories. The original of this letter came into the possession of the writer of this article in 1860:

"CAMP AT RAYS TOWN, 25*th Septr.*, 1758.

"DEAR MADAM:—Do we still misunderstand the true meaning of each others Letters? I think it must appear so, tho' I would feign hope the contrary as I cannot speak plainer without—but I'll say no more, and leave you to guess the rest.

"I am now furnish'd with News of a very Interesting nature, I know it will affect you but as you must hear it from others I will state it myself. The 12th past then, Major Grant with a chosen Detachment of 800 Men Marchd from our advanced Post at Loyal Hannan against Fort Du-quesne. On the Night of the 13th he arrivd at that place, or rather upon a Hill near to it; from whence went a Party and viewd the Works, made what observation's they coud, and burnt a Logd House not far from the Walls. Egg'd on rather than satisfied by this success, Major Grant must needs Insult the Enemy next Morning by beating the Reveille in different places in view, this causd a great Body of Men to Sallie from the Fort and an obstinate Engagement to ensue, which was maintained on Our Side with the utmost efforts that bravery coud yield, till being overpower'd and quite Surrounded they were obliged to Retreat with the loss of 22 Officers killd and 278 Men besides wounded.

"This is a heavy blow to our Affairs here, and a sad stroke upon my Regiment, that has lost out of 8 Officers and 168 that was in the Action, 6 of the former killd and a 7th Wounded—and 62 of the latter killd besides wounded. Among the Slain was our dear Major Lewis;—this Gentleman as the other Officers also did, bravely fought while they had life, tho wounded in different places. Your old acquaintance Capt'n Bullett, who is the only Officer of mine that came of untouchd, has acquird immortal honour in this Engagement by his gallant behaviour and long continuance in the field of Action. It might be thought vanity in me to praise the behaviour of my own People were I to deviate from the report of common Fame.—but when you consider the loss they have sustaind, and hear that every mouth resounds their praises, you will believe me Impartial.

"What was the great end proposd by this attempt, or what will be the event of its failure, I cant take upon me to determine; it appears however (from the best Accts) that the Enemy lost more Men than we did in the Engagement. Thus it is the Lives of the brave are often disposd of—but who is there that does not rather Envy, than regret a Death that gives birth to Honour and Glorious memory.

"I am extremely glad to find that Mr. Fairfax has escap'd the Dangers of the Siege at Louisburg. Already have we experienced greater Losses than our Army Sustaind at that place, and have gaind not one obvious Advantage. So miserably has this Expedition been managd, that I expect after a Months further Tryal, and the loss of many more Men by the Sword, Cold, and Perhaps Famine, we shall give the Expedition over as Impracticable this Season and retire to the Inhabitants condemnd by the World, and derided by our Friends. I shoud think my time more agreeable spent believe me, in playing a part in Cato with the Company you mention, and myself doubly happy in being the Juba to such a Marcia as you must make.

"Your agreable Letter containd these words.—"My Sisters "and Nancy Gist who neither of them expect to be here "soon after our return from Town, desire you to accept "their best Complimts, &c." Pray, are these Ladies upon a Matrimonial Scheme? Is Miss Fairfax to be transformd into that charming Domestick—a Martin—and Miss Cary to a Fa-re. What does Miss Gist turn to—A Cocke—that cant be we have him here.

"One thing more and then have done. you ask if I am not tird at the length of your Letter? No Madam I am not, nor never can be while the Lines are an Inch assunder to bring you in haste to the end of the Paper. you may be tird of mine by this. Adieu dear Madam, you possibly will hear something of me, or from me before we shall meet. I must beg the favour of you to make my Compliments to Col^{o} Cary and the Ladies with you, and believe that I am most unalterably

"Yr Most Obedt. and Oblig'd,

"G^{o}. WASHINGTON."

Washington was married to the lady to whom this letter was addressed (Mrs. Martha Custis, born Dandridge, the widow of John Parke Custis, Esq.) on Jan. 17, 1759. Having been 5 years engaged in the military service of the country, and sought promotion without success in the royal army, he took advantage of the fall of Fort Duquesne and the expulsion of the French from the valley of the Ohio, to resign his commission in the colonial service. His proved courage, discretion, and resources had gained for him the confidence of the conceited and pragmatical Dinwiddie and the headstrong and arrogant Braddock, as they did afterward of the circumspect and persevering Forbes; but in England they earned for him nothing but a good-natured rebuke from George II. and a sneer from Horace Walpole. He retired from the service the youthful idol of his countrymen, but without a civil word from the fountain of honor. Such however was the distant preparation for his next appearance in the field, after 17 years of retirement, as the "commander-in-chief of the army of the united colonies, and of all the forces now raised or to be raised by them." Such was the colonial policy by which the horse guards occasionally saved a commission for the third son of a duke, by which the crown lost a continent, and the United States gained a place in the family of nations.—Shortly after his marriage, Washington removed to Mount Vernon, where he enlarged the mansion, embellished the grounds, and added to the estate by the purchase of lands in the neighborhood. As a member of the provincial assembly, his winters were passed in Williamsburg. He was at no period of his life an active partisan leader, but at all times and in all assemblies he exercised a paramount influence by soundness of judgment and weight of character. Like his illustrious contemporaries Jefferson and Franklin, who excelled him in general culture, he had never formed himself to the habit, perhaps like them wanted the requisite natural talent, for parliamentary debate. The counsel which he gave to a nephew just chosen to the assembly no doubt conformed to his own practice: "If you have a mind to command the attention of the house, the only advice I will offer is to speak seldom but on important subjects, except such as particularly relate to your constituents; and in the former case make yourself perfectly master of the subject. Never exceed a decent warmth, and submit your sentiments with diffidence. A dictatorial style, though it may carry conviction, is always accompanied with disgust." Washington's occupations at Mount Vernon were those of a Virginia planter, and tobacco and wheat were, before the revolution, the staple products of his plantations. The wheat was ground to flour upon the estate, and what was not wanted for home consumption was sold at Alexandria or shipped from the river. There were also a brick yard and a carpenter's establishment on the estate, and a valuable fishery in the Potomac, which furnished a portion of the food of the laborers. The tobacco was usually shipped directly to Liverpool, Bristol, or London, from which a part of the returns were received in English manufactures; almost every article of luxury and convenience, furniture, implements of husbandry, military equipments, books, clothing, down to the minutest articles required for household use, being imported. The orders for these supplies were usually made out twice a year; some of those sent by Washington are still in existence, and throw much light on the domestic economy of the day. They show, if it needed to be shown, that the revolution did much more than effect the political independence of the United States. It emancipated us from that subjection to the colonial system of the mother country which prevented America from rising above the agricultural stage of civilization. The management of a large estate under such a system partook somewhat of the nature of commerce. Invoices of the articles to be exported and orders for the articles to be received in exchange were to be made out with mercantile exactness. Account books were to be kept and an extensive correspondence carried on. All this labor was performed by Washington with his own hand, and with remarkable precision and neatness. Mr. Lossing has given us, in his edition of the "Custis Recollections," a facsimile of the little account kept by Washington of the expenditure made on a journey to the springs in 1769, in company with his stepdaughter and for the improvement of her health, which exhibits his business habits in a very striking light, though on an occasion of no public importance. They are shown in a still more remarkable manner, and with reference to interests of the highest moment, in the accounts kept by him in his own hand of his expenses in the revolutionary war. The estate at Mount Vernon, as it was in the latter years of his life, consisted of about 8,000 acres. One half of this was in wood or uncultivated lawns, but about 4,000 acres were in tillage, and managed directly by Washington himself. The cultivated lands lay in 5 farms, each with its appropriate set of laborers directed by an overseer, the whole, during his long absences from home, under a general superintendent. During his absence each of the overseers was required to make a weekly written report to the superintendent, containing a minute account of every thing done on the farm in the course of the week, including the condition of the stock and the number of days' work performed by each laborer. These reports were recorded in a book by the superintendent, who then sent the originals in a weekly letter to Gen. Washington. A weekly answer was returned; usually a letter of 4 pages, sometimes of twice that length, carefully prepared from a rough draft, then neatly transcribed by the writer; after which a press copy was taken. The rotation of crops in his numerous fields was arranged by himself for years beforehand. The culture of tobacco was given up in the latter part of his life, as exhausting to the soil and unfavorable to the health of the laborers. Not content with general results, nor relying exclusively on the discretion of his superintendents, he gave instructions from the seat of government, while president of the United States, as to the smallest details in the management of his farms. Even when he was on the march to suppress the insurrection in western Pennsylvania in 1794, his correspondence with his superintendent was continued. A short letter was written by him from Reading and another from Carlisle, on his way to the rendezvous of the army. In these letters he mentions the appearance of the buckwheat and the potatoes which he saw in the fields by the roadside, and gives a general direction for the care of his stock at the approach of cold weather. On Dec. 10, 1799, 4 days before his death, he addressed a long letter to the superintendent of his farms, the last elaborate production of his pen, enclosing a plan drawn up on 30 folio pages, containing directions for their cultivation for several years to come. The proprietor of a large landed property in eastern Virginia, Washington was, as a matter of course, a slaveholder. He inherited a plantation cultivated by slaves, and their number was largely increased by the dowry of his wife. The whole number belonging to the estate of Washington in his own right, at the time of his decease, was 124; the "dower negroes," as they are styled in his will, were probably as numerous. His correspondence shows him to have been a strict and vigilant, but at the same time a kind, just, and considerate master; not more careful of his own interests than of the health and comfort of his dependents. As early as 1786 he had formed a resolution never, unless compelled by particular circumstances, "to possess another slave by purchase." In a letter written to Mr. Morris in that year he says: "There is not a man living who wishes more sincerely than I do to see a plan adopted for the abolition of slavery. But there is only one proper and effectual mode by which it can be accomplished, and that is by legislative authority; and this, as far as my suffrage will go, will never be wanting." This sentiment recurs in several parts of his correspondence. He deprecated, however, all interference, unauthorized by law, with the rights of the master. The letter to Mr. Morris just cited was written "at the instance of Mr. Dalby of Alexandria, who is called to Philadelphia to attend what he conceives to be a vexatious lawsuit respecting a slave of his, whom a society of Quakers in the city, formed for such purposes, have attempted to liberate." The letter contains strong expressions against attempts of this kind, which he condemns, however, on the supposition that they were not sanctioned by the law of Pennsylvania. "Had the case been otherwise," he observes, "whatever my opinion of the law might have been, my respect for the policy of the state would, on this occasion, have appeared in my silence; because against the penalties of promulgated laws one may guard, but there is no avoiding the snares of individuals, or of private societies." In an elaborate letter to Sir John Sinclair, written by Washington from Philadelphia during the second term of his presidency, he assigns the following, among other reasons, why the price of land in Pennsylvania is higher than in Maryland and Virginia: "because there are laws here for the gradual abolition of slavery, which neither of the two states above mentioned have at present, but which nothing is more certain than that they must have at a period not remote." In accordance with the views which he had so long entertained, he provided by his will for the freedom of his slaves on the decease of his wife. "To emancipate them before," he remarks in his will, "would, though earnestly wished by me, be attended with such insuperable difficulties, on account of their intermixture by marriage with the dower negroes, as to excite the most painful sensations, if not disagreeable consequences to the latter, while both descriptions are in the occupancy of the same person, it not being in my power, under the tenure by which the dower negroes are held, to manumit them." A note by the appraisers, at the end of the inventory of the Mount Vernon property, after stating the number of slaves held by the deceased in his own right, is to the following effect: "whom Mrs. Washington intending to liberate at the end of the present year, can only be valued for the service of the working negroes for one year." Whether the dower negroes were emancipated at the same time, or at the death of Mrs. Washington, which took place May 22, 1802, or whether, following by the laws of Virginia the condition of real property, Mrs. Washington had but a life estate in them and they descended to her first husband's heirs, is not known to the writer of this article. Nothing is said of slaves in Mrs. Washington's will. For the support and education of those emancipated by Washington, and especially for the support of his favorite servant Billy, provision was made by his will.—In the year 1770, accompanied by his friend Dr. Craik, Washington made a journey to western Virginia. His thoughts had from his youth turned decidedly in that direction; a communication between tide water and the western rivers was, as we shall presently see, an object which he had greatly at heart. His present journey was made with a few friends and servants on horseback as far as Pittsburg, then a mere germ of settlement. The route carried them over the fields of his first hazardous adventure to Venango, and of the more disastrous days of July 3, 1754, and July 9, 1755. From Pittsburg the party descended the Ohio in the river boats of that day, not safe from the rifle of the Indian on the right bank, and landing to pass the night on the left. Among their objects in visiting the Great Kanawha was the selection of fertile lands in that region still lying in a state of nature; and it is here that the romantic incident before related occurred, known as the "Indian prophecy," and for which Mr. Custis cites the authority of Dr. Craik.—Washington was a member of the house of burgesses during the whole period of that war of legislation in England and popular resistance and agitation in the colonies, which preceded the appeal to arms. He may unquestionably be considered as a fair representative of the conservative patriotism of the colonies. His military education, his great stake as a property holder, and his habitual respect for lawful authority led him, as they did all others of his class, to deprecate a rupture with the mother country; but the moment it became evident that the connection could be kept up only by the sacrifice of the principle that representation and taxation should go hand in hand, he placed himself in the front rank of the patriots. The principles which guided him, alike in preliminary opposition to the ministerial policy, and in assuming the fearful responsibility of armed resistance, are summarily expressed in a letter written from Philadelphia during his attendance as a member of the first continental congress in the autumn of 1774, to Capt. Mackenzie, a brother officer of the old war, then stationed in Boston. "I think," said he, "I can announce it as a fact, that it is not the wish nor the interest of the government of Massachusetts, or any other government upon this continent separately or collectively, to set up for independence; but this you may rely upon, that none of them will ever submit to the loss of those valuable rights and privileges which are essential to the inhabitants of every free state, and without which life, liberty, and property are .rendered totally insecure." In harmony with these moderate views, the object of the continental congress was declared by the Virginia convention, which delegated Washington and his associates to that body, to be the adoption of measures which would "speedily procure the return of that harmony and union so beneficent to the whole empire, and so ardently desired by all British America." The journal of the first session of the continental congress closes with the fervent declaration: "That your majesty may enjoy every felicity, through a long and glorious reign, over loyal and happy subjects, and that your descendants may inherit your prosperity and your dominions till time shall be no more, is and always will be our sincere and fervent prayer." These glowing assurances of affectionate attachment to the person and government of George III. were, on Oct. 26, 1774, placed upon the journal of a body of which Washington was declared by Patrick Henry to be "for solid information and sound judgment unquestionably the greatest man on the floor." But on April 19, 1775, the appeal to arms was made at Lexington and Concord; and the continental congress, which had vowed eternal loyalty to George III. in the preceding October, on June 5 following unanimously elected George Washington as commander-in-chief of the armies of the revolution. To relate the life of Washington in that capacity would be to repeat the history of the revolutionary war. To do this, even so far as his direct and personal agency is concerned, would exceed the permitted limits of this article, and would be substantially a reproduction of that portion of our article on the United States which narrates the progress of this struggle. It is sufficient to say that the war was conducted by Washington under every possible disadvantage. He engaged in it without any personal experience in the handling of large bodies of men, and this was equally the case with all his subordinates. The continental congress, under whose authority the war was waged, was destitute of all the attributes of an efficient government. It had no power of taxation, and no right to compel the obedience of the individual. The country was nearly as destitute of the *matériel* of war as of the means of procuring it; it had no founderies, no arsenals, no forts, no navy, no means, no credit. The opposing power had all the prestige of an ancient monarchy, of the legitimate authority, of disciplined and veteran armies, of a powerful navy, of the military possession of most of the large towns, and the machinery of government for peace and war. It had also the undoubted sympathy of a considerable portion of the people, especially of the wealthy class. That Washington, carrying on the war under these circumstances, met with frequent reverses, and that the progress of the revolution as conducted by him seemed often languid and inert, is less wonderful than that he rose superior to such formidable obstacles, and was able, with unexhausted patience and matchless skill, to bring the contest eventually to an auspicious and honorable close. He appeared at Cambridge to take command of the forces besieging Boston on July 2, 1775. No event of great significance followed for nearly 8 months. The country fretted under the inaction of the army; the army languished under indiscipline, the home sickness of raw troops, inoculation for small pox, the want of every requisite for strength or comfort, and especially a military chest. The evacuation of Boston on March 18, 1776, was the glorious reward of the perseverance and skill of the commanding general. Then followed, in rapid succession, the disasters of Long island, of Fort Washington, and of the calamitous retreat through the Jerseys. The brilliant *coup de main* of Trenton and the substantial success of Princeton restored the drooping courage of the people, as they justly earned for their chief a place among the great masters of war. But they were followed by the reverse at Brandywine, the unsuccessful blow at Germantown, and the terrible winter at Valley Forge. The next summer, the courage and skill of Washington turned a disgraceful commencement of the day at Monmouth into a substantial victory; but from that time forward no brilliant success attended the forces under his immediate command, till the final blow was struck, with the overwhelming numbers of the combined American and French forces, at Yorktown. After this great success the war still dragged out a lingering existence. More than two years elapsed from the capitulation of Yorktown to the evacuation of New York. Events like these do not surely make a brilliant military career, when tried by the popular standard of success. At times they shook even the well established popularity of Washington. The all-important success of Gates at Saratoga formed an unsatisfactory contrast with Brandywine and Germantown, which occurred in the same campaign. The second place in the army was held for three years by a turbulent and empty braggart, perpetually laboring in secret to undermine the popularity which he dared not openly assail; while cabals and boards of war in congress endeavored, by disgusting the commander-in-chief, to drive him to resignation. But in vain. The country saw that he was doing his best with his wretchedly limited means; that he was hopeful while others were despondent; that he was wise and prudent, while others were indiscreet, or feeble, or rash; in fact, that the cause was embodied in him and in his hold on the heart of the people. A position like this, sustained during all the vicissitudes of a seven years' war, could hardly fail to call out every variety of qualification and every shade of character on the part of the commander. It is accordingly remarkable that on one point at least some shade of doubt surrounds the traditions of Washington. He is usually accepted, at home and abroad, as a model of circumspection and prudence in word and deed. A most voluminous correspondence, official and private, may be searched in vain for a burst of passion. Habitual decorum and unfailing self-respect drew around him a charmed circle, as much as around any man that ever lived. The most audacious self-conceit and the most stolid impudence quailed in his presence. But in strange contradiction with these acknowledged habits and character, one or two floating traditions make him guilty on occasion of uncontrollable bursts of temper and strange violations of propriety. It is satisfactory to find that the most current of these anecdotes shrink into narrow dimensions under the sifting of historical criticism. Thus it is said that when, in the morning at Monmouth, he encountered Lee in full retreat, he was not only betrayed into an ungovernable fit of passion, but accosted that officer, who stood next to himself in command, as a "damned poltroon." This has been stated, on the supposed authority of Lafayette "relating the circumstance to Gov. Tompkins in 1824," and adding: "This was the only time I ever heard Gen. Washington swear." To every one who has studied the life and character of Washington this ancedote carries intrinsic improbability on its face. It is not in keeping with any thing in his writings or with the traditions of his conversation. It is in the highest degree improbable that a person, capable of using such an expression once, should not, in seven years of intimate and confidential intercourse with a trusted friend and brother officer, have been heard to use it more than once. Lafayette, in his sworn evidence before the court martial, testifies to nothing of the kind; and a familiar conversation repeated at second hand, after a lapse of 46 years, surely can weigh nothing against sworn testimony at the time. The writer has been informed by Mr. Sparks that Gen. Lafayette, in giving him a detailed account of the affair at Monmouth, made no mention of such language. Gen. Lee, in his angry and disrespectful letter of July 1 (June 29), 1778, to Gen. Washington, which was among the causes of his arrest and trial, makes no mention of profane language or opprobrious epithets. He speaks only of "singular expressions," which "implied that I was guilty of disobedience of orders, want of conduct, or want of courage." Is this the manner in which a major-general would speak of the blasting epithet affirmed by the anecdote? Washington, in his reply the next day, and when the supposed rage of the moment had had time to cool, says: "I am not conscious of having made use of any very singular expressions at the time of meeting you, as you intimate. What I recollect to have said was dictated by duty and warranted by the occasion." Finally, though of course it was the object of Gen. Lee, through his witnesses, to make out as strong a provocation as possible, in order to palliate the offence of writing the letter, which was the specification to support the charge of "disrespect to the commander-in-chief," not one of those witnesses affords the least countenance to this anecdote. Lee himself, in his defence before the court martial, reported no doubt with accuracy the words used by Washington. "When I arrived," says he, "first in his presence, conscious of having done nothing that could draw upon me the least censure, but rather flattering myself with his congratulation and applause, I confess I was disconcerted, astonished, and confounded by the words and manner in which his excellency accosted me. It was so novel and unexpected from a man whose discretion, humanity, and decorum I had, from the first of our acquaintance, stood in admiration of, that I was for some time unable to make any coherent answer to questions so abrupt, and in a great measure to me unintelligible. The terms I think were these: 'I desire to know, sir, what is the reason whence arises this disorder and confusion?'" These words, rapidly repeated, and in a tone expressing disappointment and indignation, were no doubt the words used by Washington.—On Dec. 23, 1783, Washington, in a parting address of surpassing beauty, resigned his commission as commander-in-chief of the army to the continental congress sitting at Annapolis. He retired immediately to Mount Vernon, and resumed his occupation as a farmer and planter, anxiously shunning all connection with public life. Much of his time, however, was occupied by a laborious correspondence on the infinity of subjects connected with the revolutionary war, and by the throng of visitors from every part of the Union and of Europe. It is a very striking fact, and one that strongly illustrates the singleness of purpose with which he devoted himself to the public service, that, during the 8 years of the war, he visited Mount Vernon but once, and then when he took it directly on his way to Yorktown, in company with the count de Rochambeau. In 1784 he crossed the Alleghanies, partly to look after his lands in that region, and partly to explore the head waters of the rivers which take their rise in the interior of Virginia, with a view to their connection with the western waters. On his return he addressed a carefully prepared memoir on this subject to the legislature of Virginia. This communication had a powerful effect on the public mind, and led to the organization of the James river and Potomac canal companies. In acknowledgment of his agency on this occasion, and still more of his revolutionary services, the state of Virginia presented him with 50 shares in the Potomac canal, valued at $10,000, and 100 shares in the James river canal, valued at $50,000. He accepted the donation only as the trustee of some public object. The shares in the James river canal were appropriated by him for the endowment of a college at Lexington in Rockbridge co., Va., which in consequence assumed the name of Washington college. The shares in the Potomac canal were appropriated as the endowment of a university at the seat of the federal government.—The United States, as is well known, after the revolution, fell into a state of governmental inanition bordering on anarchy. The recommendations of the continental congress were without weight, no revenue accrued to the treasury, and the European debt, principal and interest, remained unpaid. Foreign governments held the United States in low repute; the Indian tribes scourged the frontier; the separate states, instead of acting in harmony, enacted conflicting laws for imposing duties on foreign commerce; in a word, discontent was universal. To put an end to the controversies between Maryland and Virginia, relating to the navigation of the rivers which divided their territories, a meeting took place at Alexandria in 1785, and while there a visit of the members was made to Mount Vernon. This led to the call of a convention of delegates, which was assembled at Annapolis in 1786, of which the object was "to take into consideration the trade of the United States; to examine the relative situation and trade of the said states; and to consider how far a uniform system in their commercial regulations may be necessary to their common interest and permanent harmony." The delegates of 5 states only attended this meeting, and some of them with powers too limited for any valuable purpose. They accordingly drew up a report, recommending a meeting in Philadelphia the following May, under the sanction of the federal congress. Washington warmly approved these proceedings, though from some motive of personal delicacy, perhaps as a riparian proprietor on one of the rivers whose navigation was the original cause of the movement, he declined to serve as a delegate to the preliminary meeting. He however reluctantly accepted an appointment as one of the delegates from Virginia to the convention which met at Philadelphia in May, 1787. To this body belongs the honor of having framed the constitution of the United States. Washington was unanimously elected its president; but, as is usual in deliberative bodies of this kind, most of the business was transacted in committee of the whole, Mr. Nathaniel Gorham of Massachusetts being placed by Washington from day to day in the chair. On Sept. 17, 1787, the fruit of the labors of this patriotic body was given to the people of the United States, with an official letter from the president of the convention. This instrument of government, under which the United States have so signally prospered for three quarters of a century, though not deemed perfect in every point by Washington, was regarded by him, and declared in his correspondence to be, the best that could be hoped for—the only alternative for anarchy and civil war. Mr. George Ticknor Curtis, in his "History of the Constitution," has preserved the tradition, "that, when Washington was about to sign the instrument, he rose from his seat, and holding the pen in his hand, after a short pause pronounced these words: 'Should the United States reject this excellent constitution, the probability is that an opportunity will never again be offered to cancel another in peace; the next will be drawn in blood.'" Gen. Washington was nominated as president of the convention by Robert Morris, acting by instructions of the delegates from Pennsylvania, from whom this compliment came with especial grace, as the only possible competitor for the chair would have been Dr. Franklin. Mr. John Rutledge of South Carolina seconded the motion, and the choice was unanimous. On taking the chair Gen. Washington (as reported by Mr. Madison) "thanked the convention in a very emphatic manner for the honor they had conferred on him; reminded them of the novelty of the scene of business in which he was to act; lamented his want of better qualifications; and claimed the indulgence of the house toward the involuntary errors which his inexperience might occasion." He spoke but twice during the pendency of the constitution before the convention, and then but a few words. The first time was to assign a reason for his vote in favor of giving to the house of representatives the exclusive origination of money bills, which he had at first opposed. "He gave up his judgment," he said, "because it was not of very material weight with him, and was made an essential point with others, who, if disappointed, might be less cordial on other points of real weight." The other occasion on which Washington spoke, in the progress of the discussions, was of greater importance, and was evidently a matter of previous arrangement. On the very last day, and just before the constitution was signed by the members of the convention, Mr. Gorham of Massachusetts, a person of great influence in the body, rose and said: "If it was not too late, he could wish, for the purpose of lessening objections to the constitution, that the clause declaring that 'the number of representatives should not exceed one for every 40,000,' which had produced so much discussion, might be reconsidered, in order to strike out 40,000 and insert 30,000. This would not, he remarked, establish that as an absolute rule, but only give congress a greater latitude, which could not be thought unreasonable." This motion was seconded by Mr. King and Mr. Carroll. When Gen. Washington rose for the purpose of putting the question, he said, "that although his situation had hitherto restrained him from offering his sentiments on questions depending in the house, and it might be thought ought now to impose silence on him, yet he could not forbear expressing his wish that the alteration proposed might take place. It was much to be desired that the objections to the plan recommended might be made as few as possible. The smallness of the proportion of representatives had been considered by many members of the convention an insufficient security for the rights and interests of the people. He acknowledged that it had always appeared to himself among the exceptionable parts of the plan; and late as the present moment was for admitting amendments, he thought this of so much consequence, that it would give him much satisfaction to see it adopted." This was *deus ex machina*. "No opposition was made to the proposition of Mr. Gorham, and it was agreed to unanimously." The first house of representatives, with a ratio of 30,000, consisted of but 65 members for the 13 states. The earnestness with which the lower ratio was contended for will not be surprising when we reflect on the smallness of this number. The new constitution was far from being warmly or generally welcomed. In the course of 10 months it was adopted by small majorities in the conventions of the requisite number of states; and it is a matter of doubt whether it would have been ratified but for the transcendent popularity of Washington, who had given it his cordial approval, and who was instinctively marked out by public expectation as the first president. He was chosen by the unanimous vote of the electoral colleges, New York alone not having taken interest enough in the organization of the government to appoint electors. Another striking proof of the stagnation of interest in the country with reference to the new constitution may be seen in the fact, that although the 4th of March was fixed upon for the meeting of the first congress, a bare quorum of the house of representatives did not assemble till the 1st of April, nor of the senate till the 6th. It was not till the 30th of April that President Washington was inaugurated. Debates on the title to be given to the newly elected president had delayed the organization of the government. The committee of the senate to whom the subject was referred, consisting of Richard Henry Lee of Virginia, Mr. Izard of South Corolina, and Mr. Dalton of Massachusetts, reported in favor of addressing him as "his highness the president of the United States of America and protector of their liberties." The senate favored this lofty title; but the house of representatives deemed it inexpedient to bestow any title on the president or vice-president, and this opinion finally prevailed. The title of "highness" was however occasionally made use of in popular parlance at the commencement of his administration. Washington accepted the candidacy for the new office with unaffected reluctance. He came out of the war of the revolution with a reputation which could not easily be raised, and which might be seriously imperilled in the attempt to put the new system into operation. In addition to this, he craved the quiet happiness of private life. But no private life is permitted to a man like Washington; the country is his family, the interests of millions his daily household care. Previous to his departure for the seat of government, Washington visited his aged mother and saw her for the last time in Fredericsburg. Mr. Custis undertakes to repeat the words in which he addressed her and her reply, but no memorandum could have been made of them at the time, and the inflated language is in keeping with the characters of neither of these venerable personages. In the summer of 1789 the newly elected president had a dangerous fit of illness at New York. His disease was a malignant carbuncle in the thigh, which was cured by a surgical operation skilfully performed by Dr. Bard the younger. In the autumn of this year the president made a tour through the eastern states, travelling with his own horses and carriage. His interesting journal of this tour, of which the original manuscript is in the possession of Mr. J. Carson Brevoort, of Brooklyn, has been recently published. A similar journey was made through the southern states the following spring, of which the journal also has been lately published. These tours were attended with an unbroken series of ovations throughout the country.—The state of affairs when Washington acceded to the presidency in 1789 was one of the greatest difficulty and embarrassment. The system of government was wholly new, and there was a consequent want of traditionary experience in every department. The confederation, except nominally and for military purposes, wanted nearly all the attributes of a government. The constitution of 1789, on the contrary, as far as the objects are concerned for which the Union was framed, created a government possessing all those attributes as completely as the government of Great Britain or Russia. But Washington was called to put this newly framed and untried government into operation. He called to his cabinet Mr. Jefferson for the department of state, Mr. Hamilton for the treasury, and Gen. Knox for the department of war. There was for some years no navy or naval department. Foreign affairs were in an unsatisfactory condition. England allowed 8 years to pass from the treaty of 1783 before she sent a minister to the United States, although a minister was early sent to London by the congress of the confederation. In the mean time active causes of irritation existed between the two countries: on the part of the United States, the obstacles thrown by state legislation in the way of recovering debts due to British subjects; on the part of England, the detention of the western posts and the impressment of American seamen. The assembly of notables met in France the same year that the constitution of the United States went into operation. Our relations with that country soon fell into inextricable confusion. A considerable debt due to France and Holland stared the new government in the face. General apathy, distrust, and uneasy expectation reigned at home. Out of this chaos order was speedily educed by the administration, guided by Washington's own consummate prudence, and notwithstanding the existence in the cabinet itself of early developed elements of discord. The discussions with Great Britain after the arrival of the first minister in 1791 were skilfully and patiently conducted by Mr. Jefferson. The insults of the French envoys were mildly repelled or borne with a stoical equanimity, in remembrance of the services rendered to us by France in the hour of trial. The genius of Hamilton, at once creative and practical, gave us the funding system, and with it revenue and credit. The assumption of the state debts created living capital out of the ashes of revolutionary bankruptcy. Our commerce, protected by a national flag and emancipated from the colonial restrictions of Great Britain, began to whiten every sea; and the vacant lands in the western counties of the Atlantic states filled up with a rapidly increasing population. The settlement of the territories on the right bank of the Ohio was prevented, during the first administration of Washington, by the non-surrender of the western posts. Their detention by Great Britain gave strength and audacity to the Indian tribes, and entailed upon the frontier the disasters of two unsuccessful campaigns, that of Harmer in 1790, and especially that of St. Clair in 1791. The last has furnished the subject of an anecdote (narrated at length in Mr. Irving's "Life of Washington," vol. v. p. 101) relative to a supposed ebullition of passion on the part of President Washington on the receipt of the disastrous intelligence, not unlike that which we have already examined in relation to the encounter of Washington with Lee at Monmouth, and obnoxious like that to the gravest suspicions of inaccuracy and exaggeration. The limits of this article do not permit a detailed criticism of the anecdote in question, which rests upon the authority of the sole witness of the supposed scene, but is related with considerable circumstantial diversity by those to whom he repeated it, and carries on the face, in more than one respect, strong marks of improbability.—The first measures of the administration in the organization of the government, the establishment of the courts of justice and the machinery for collecting duties on imports, were not attended with serious political embarrassment. Little was required to be done by the president but to give his official sanction to the acts of congress. There were, however, not only in that body, but in the cabinet, conflicting tendencies—a legacy from the confederation and the convention which formed the constitution itself. The party which had opposed the adoption of that instrument, and were thence known as anti-federalists, were now opposed to the system of policy which was designed to strengthen the general government; while the federalists, who had procured the adoption of the constitution, were in favor of measures that would give efficiency to the central power, and make the Union a reality instead of a name. The latter party was represented in the cabinet by Col. Hamilton, the secretary of the treasury, supported by the secretary of war, Gen. Knox; the former by Mr. Jefferson, the secretary of state, sustained by Mr. Randolph, the attorney-general. Neither of these latter gentlemen, however, had opposed the adoption of the constitution. On the contrary, Mr. Randolph had vigorously supported it in the Virginia convention; and Mr. Jefferson, being in France at the time, had taken no active part on the question of its adoption. Gen. Washington, far above party bias and strong in the unanimous support and undivided confidence of the country, exerted all his influence to moderate between the diverging tendencies of his cabinet councillors. The details of the funding system, the assumption of the state debts, and the establishment of the bank of the United States, were the measures which revealed in all its strength this division of opinion in the cabinet, the legislature, and the country. All of every party were, or professed to be, in favor of some measure for funding the national debt and creating a solvent treasury; but the details of the measures necessary to this end afforded much occasion for controversy. Washington listened with the utmost candor and patience to the opposite opinions of the members of his cabinet, but eventually gave his support to the general views of the secretary of the treasury. The conflict was most violent on the subject of assuming to a limited extent the revolutionary debt of the individual states. This was large in some of the states, and small or null in others. The states of the latter class, principally those of the South, were unwilling that the common treasury should assume a burden from which no benefit would accrue to them. The fact that these state securities, like those of the Union, had passed from the hands of the original holders at a greatly depreciated rate, was the ground of a popular objection to the entire policy of assumption. Congress was about equally divided on the subject, as also upon a measure which was contemporaneously under discussion, that of a permanent seat for the general government. The first congress met at New York and the second at Philadelphia. A majority of the members from the northern and middle states were desirous of making the latter city the permanent metropolis of the Union. An arrangement was finally made in reference to the two questions, in virtue of which the state debts were assumed to the amount of $20,000,000, and the seat of the federal government was established on the banks of the Potomac. It was understood that this settlement was in full concurrence with the wishes of the president. In fact, no object was nearer his heart than to prevent the growth of an embittered party spirit, especially when it assumed the form of a sectional division. His official course, as far as possible, tended to check this great evil, and the most earnest and affectionate appeals were made by him in private to the two great leaders of the opposite parties in his cabinet. Among the topics of discontent, on the part of those opposed to the policy which on the whole prevailed under President Washington's administration, as much interest was attached to some matters of mere form and ceremony, as to the gravest measures of state. From an early period after its organization, there was a great resort of visitors, both Americans and foreigners, to the seat of government, and to approach the person of Gen. Washington was the object of universal desire. To gratify this wish without the entire sacrifice of his time, the president held a reception for men on Tuesday, on Friday afternoon Mrs. Washington received both sexes, and on Thursday there was a dinner party for invited guests. The manners of that day certainly admitted a kind of state quite out of fashion at present. In dress and equipage there was a degree of display rarely if ever seen of late years. For these and other causes, and especially from an air of unconscious majesty which surrounded the person of the president, and produced a repression of spirits on the part of all who approached him, the receptions at his mansion were no doubt far more select, and the tone of the circle more subdued and ceremonious, than that of the throngs which crowd the White House at the present day. Gen. Washington was sensitive to the cavils of which his receptions were the subject, and bestowed more attention perhaps than they deserved on the attempt to show their injustice. He probably cared little for them in themselves, but regarded them as indications that in time his hold on the public confidence might be shaken with reference to matters of greater importance. These feelings, and a growing wish to return to the tranquil enjoyments of private life, determined him, as the close of his first administration approached, to announce the purpose of declining a reëlection. With this object in view he requested the assistance of Mr. Madison in preparing the draft of a valedictory address to the people. His purpose however was overcome by the warm dissuasions of personal and political friends of all parties, and in the autumn of 1792 he was unanimously reëlected. Important measures marked his second administration. The great rivals of his cabinet retired and left their places to men of inferior ability, but pursuing the same line of policy as their predecessors. Decisive measures were adopted in reference to the foreign relations of the Union. The proclamation of neutrality rescued the country from the imminent peril of being drawn into the vortex of the French revolution. The treaty negotiated with England by Chief Justice Jay settled several of the subjects of controversy with that country. The victory of Wayne broke the power of the Indians in the north-west, and the treaty of Greenville and the surrender of the western posts under Jay's treaty assured the peace of the western frontier. The general tranquillity was threatened, and for a season disturbed, by the insurrection in the western counties of Pennsylvania; but a body of 15,000 of the militia of the neighboring states was called out by President Washington, and the movement was crushed in one short campaign, without an effusion of blood. It might have been hoped that in thus scattering the clouds of foreign war, giving safety to a vast unsettled frontier, infusing life into every branch of industry, and conducting the country step by step in the path of an unexampled prosperity, the popularity of the president, which indeed could not have been augmented, would at least have been sustained. At no period of his life, however, was it so materially impaired as in the last years of his second administration, and nowhere so much as in his native state of Virginia. Early in the year 1796 he formed the irrevocable purpose of retiring, and took counsel with Col. Hamilton, no longer his official adviser, but still retaining all his confidence, as to the preparation of his "Farewell Address." The various steps taken in drawing up this important state paper are a subject of very curious and interesting inquiry, and have been fully treated in a recently published volume of the Hon. Horace Binney. It was issued to the country Sept. 17, 1796. At the close of the next session of congress Washington retired, as he thought for ever, from the public service, and withdrew to Mount Vernon. A twelvemonth, however, had hardly elapsed, before our long standing controversy with the directory of France culminated in a quasi war. Measures of preparation, military and naval, were adopted by congress, and Washington was appointed lieutenant-general of the armies of the United States. He accepted the post with extreme reluctance, but in that spirit of obedience to the call of duty which had been the governing rule of his life. In a letter to the secretary of war, he makes such distinct allusion to the success of the youthful generals in command of the French armies, as shows that the possibility that he might be called to measure swords with the chief of these youthful generals, Napoleon, must have crossed his mind. But the hero of Arcole and Lodi was diverted to the expedition against Egypt, from which he soon returned to prostrate the directory and conclude a peace with the United States. Washington had never believed that the government of France would be so ill advised as to push the controversy to the arbitrament of war; but he did not live to see the threatening cloud dispersed. The commencement of the month of December, 1799, found him in remarkably good health, approaching the close of his 68th year, and in the entire enjoyment of his physical and mental faculties. On the morning of Thursday, the 12th, after writing to Gen. Hamilton the last letter that ever issued from his pen, he took his usual ride around his farms. The day was overcast when he started, and about one o'clock "it began to snow, soon after to hail, and then turned to a settled cold rain." He remained, however, for two hours longer in the saddle, and on his return home sat down to dinner without changing his dress, although the snow when he came into the house was clinging to his hair behind. The next day there were three inches of snow on the ground in the morning, and Washington, complaining of a cold, omitted his usual ride. As it cleared up in the afternoon, he went out to superintend some work upon the lawn in front of the house. He was at this time hoarse, and became more so toward evening; but he made light of it, and took no remedy. He passed the evening as usual, reading the papers and answering the letters of the day, and in conversation with his secretary. Between 2 and 3 o'clock in the morning of Saturday, he awoke Mrs. Washington, telling her he had had an ague fit and was very unwell. He would not, however, at that time allow the family to be disturbed for aid. At daybreak his secretary was called, and his physician Dr. Craik, who lived at Alexandria, was sent for. At sunrise he was bled by one of his overseers, but with little relief, and he rapidly grew worse. Dr. Craik arrived about 11 o'clock; bloodletting was repeated, and other remedies adopted, but without effect. Two consulting physicians arrived in the course of the day, and venesection was again attempted. About half-past 4 he requested Mrs. Washington to bring two papers from his study. Having examined them, he gave her back one to be destroyed, and the other to be preserved as his will. He continued to speak and swallow with increasing difficulty, and suffered great pain, but retained his faculties to the last, and gave a few directions relative to his affairs and his burial. About 4 o'clock in the afternoon he said to

Dr. Craik: "I die hard, but I am not afraid to go. I believed from my first attack that I should not survive it. My breath cannot last long." At 6 o'clock, as the three physicians stood by his bedside, he was raised up and said to them: "I feel myself going; I thank you for your attentions, but I pray you to take no more trouble about me. Let me go off quietly; I cannot last long." About 10 o'clock, after several ineffectual attempts to speak intelligibly, he said to Mr. Lear, his secretary: "I am just going; have me decently buried, and do not let my body be put into the vault till three days after I am dead." He presently said: "Do you understand me?" and on Mr. Lear's replying that he did, Washington said: "It is well." These were the last words which he spoke. Between 11 and 12 o'clock, and about 10 minutes before he died, his breathing became easier. He lay quietly, withdrew his hand from Mr. Lear's, and felt his own pulse. At this moment his countenance changed, his hand fell from his wrist, and he expired without a struggle. These details are derived from a memorandum of the last days and death of Washington, drawn up the next day by Mr. Lear, and copied by Mr. Sparks from the original manuscript. A certificate from Dr. Craik attests its correctness. It differs, however, in one or two particulars from a memorandum published shortly after by Drs. Craik and Dick. Mr. Lear represents Dr. Craik as having arrived at about 9 o'clock; according to his own memorandum, he arrived about 11. Mr. Lear says that Washington expired between 10 and 11; the physicians say at half-past 11. The disease of which he died was "acute laryngitis," of rare occurrence, and never described till 10 years later by Dr. Matthew Bailey of London. His case is the subject of an interesting memoir lately written by Dr. Jackson of Boston. As the tidings spread throughout the country, the death of Washington was mourned by the people as a personal bereavement. In the house of representatives of the United States, appropriate resolutions drawn by Gen. Henry Lee, one of the members from Virginia, were, in his absence, moved by his colleague Mr. John Marshall, soon after appointed chief justice of the United States. They express the public sorrow at the loss of him who was "first in war, first in peace, and first in the hearts of his fellow citizens." This celebrated and proverbial expression is repeated in the funeral oration pronounced by Gen. Lee, at the request of the committee of arrangements, with the substitution of the word "countrymen" for "fellow citizens;" and it is now usually quoted with that change.—In stature Washington was 6 feet 2 inches high, his person in youth spare but well proportioned, and never too stout for prompt and easy movement. His hair was brown, his eyes blue and far apart, his hands large, his arms uncommonly strong, the muscular development of his frame perfect. He was a bold and graceful horseman, and followed the hounds with eagerness and spirit. He was scrupulously attentive to the proprieties of dress and personal appearance; his manner was gracious and gentle, especially toward the young, with a certain military reserve in public circles. He was not voluble in conversation, nor yet unduly taciturn; his presence imposed no restraint on the young and gay; he yielded at proper times to decent mirth, and occasionally sat in silence, moving his lips, but uttering no audible sound. He was childless, but most happy in his domestic relations. His wife was of the same age as himself, comely and amiable; she brought him a large fortune; presided over his household with punctuality and order; received and entertained his guests with gracious hospitality; and in all respects adorned his official station and cheered his private life. On the death of her son, Col. John Parke Custis, at Yorktown, leaving 4 children, the two youngest, Eleanor Parke Custis, afterward married to her cousin Major Lewis, and George Washington Parke Custis, were adopted by Washington and brought up as children at Mount Vernon. An original full-length statue by Houdon in the capitol at Richmond is accepted as the standard likeness of Washington. The attitude is rather stiff, and the forehead, as in most French works of art at that period, probably somewhat too retreating. A succession of portraits, from that of the elder Peale in 1770 to that of Sharpless in 1796, exhibit his countenance, and some of them his person, with various merit and success, and through all the changes wrought by a quarter of a century. To all the other traits of excellence in his character he added profound convictions of religious truth, firm faith in an overruling Providence, reverence for the Holy Scriptures, and respect for the ordinances of the Christian church, of which he was a communicating member. To pronounce him perfect would be to attempt to raise him above the level of humanity; but history presents no one to contest his title as "the greatest of good men, and the best of great men."—See "The Writings of George Washington, being his Correspondence, Addresses, Messages, &c., with a Life of the Author, Notes, and Illustrations," by Jared Sparks (12 vols. 8vo., Boston, 1834–'7; the "Life" published separately, 8vo., 1839); the "Life of George Washington," by Chief Justice Marshall (5 vols. 8vo., Philadelphia, 1805; revised and abridged, 2 vols., 1832), and by Washington Irving (5 vols. 8vo. and 12mo., New York, 1855–'9); and smaller biographies by David Ramsay, James K. Paulding, C. W. Upham, J. T. Headley, Mrs. C. M. Kirkland, and others.

WASHINGTON, William Augustine, an officer in the American revolution, born in Stafford co., Va., Feb. 28, 1752, died in Charleston, S. C., March 6, 1810. He was the son of Baily Washington, a kinsman of Gen. Washington, and was educated for the church, but entered the continental army with the rank of captain, was in the battle of Brooklyn, distinguished himself at Trenton, and was with Gen. Mercer when he fell at Princeton. In 1778 he was a major in Col. Baylor's cavalry corps, when it was attacked by Gen. Grey at Tappan. In 1779 he joined Gen. Lincoln in South Carolina, and commanded a troop of light horse near Charleston. He and his corps were attached to the army of Gen. Morgan at the battle of the Cowpens, where he distinguished himself greatly, and had a personal conflict with Col. Tarleton, both being wounded. Congress voted him a silver medal for his services. He carried a British post at Rugeley's by stratagem, and captured a large body of troops without firing a shot. During Greene's celebrated retreat he rendered efficient service, and fought bravely at Guilford Court House, at Hobkirk's Hill, and at Eutaw. He was made a prisoner at the last named battle, taken to Charleston, and remained in captivity till the close of the war. After the war he married and settled in Charleston, and represented that district in the state legislature. When Gen. Washington took the command of the army in 1798, he appointed Col. Washington a member of his staff with the rank of brigadier-general.

WASHITA, a river of Arkansas and Louisiana. It rises in Polk co. in western Arkansas, flows E. to Hot Springs co., receiving on the way numerous small tributaries, and thence continues first S. E. and then S. W. to the N. W. corner of Dallas co.; from that point it takes a general S. E. course to the Louisiana line, whence it flows S. till it enters the Red river about 30 m. above its mouth. Its length is somewhat more than 500 m., and it is navigable for large steamers as far as Camden, 300 m. above its mouth, and for smaller steamers in time of high water to Arkadelphia and Buckport. Its principal affluents are the Saline, Bartholomew, La Fourche, and Tensas on the left bank, and the Little Missouri and Bayou d'Arbonne on the right. Below its junction with the Tensas it has also the name of the Black river.

WASHITA. I. A N. parish of La., bounded S. E. by Bayou Bœuf, and intersected by the Washita river; area, 790 sq. m.; pop. in 1860, 4,727, of whom 2,840 were slaves. The productions in 1850 were 128,000 bushels of Indian corn, 19,020 of sweet potatoes, and 3,486 bales of cotton. Pine, oak, and hickory are very abundant. The eastern portion of the Vicksburg, Shreveport, and Texas railroad is finished to Monroe, the capital. II. A S. W. co. of Ark., bounded N. partly by the Little Missouri river, and S. E. partly by the Washita, which also intersects it; area, 900 sq. m.; pop. in 1860, 12,936, of whom 4,478 were slaves. The surface is moderately hilly and the soil generally fertile. The productions in 1850 were 290,696 bushels of Indian corn, 56,988 of peas and beans, 75,291 of sweet potatoes, 3,302 bales of cotton, and 42,223 lbs. of butter. Capital, Camden.

WASHOE SILVER MINES. See Silver, vol. xiv. p. 662.

WASHTENAW, a S. E. co. of Mich., drained by Huron and Raisin rivers and their branches; area, 720 sq. m.; pop. in 1860, 35,688. It has an undulating surface, diversified by prairie and woodland, and interspersed with numerous small lakes and ponds. The soil is a rich sandy loam. The productions in 1850 were 528,042 bushels of wheat, 389,218 of Indian corn, 211,469 of oats, 133,227 of potatoes, 586,906 lbs. of butter, 109,379 of cheese, 250,775 of wool, and 40,387 tons of hay. There were 22 grist mills, 24 saw mills, 6 iron founderies, 5 woollen factories, 44 churches, 4 newspaper offices, and 8,302 pupils attending public schools. The county is intersected by the Michigan central and the Michigan southern and northern Indiana railroads. Capital, Ann Arbor.

WASP, the common name of the hymenopterous insects of the family *vespidæ*, of which the old genus *vespa* (Linn.) is the type. They are characterized by having the upper wings folded longitudinally when at rest, forming long narrow organs on the sides of the body, hence called *diploptera;* the tongue is moderate, the antennæ long, the jaws horny and serrated, and the eyes notched or kidney-shaped; the body is usually steel-blue with yellow markings, and the abdomen, except in the males, is armed with a long, powerful, and venomous sting; the legs have no appendages as in the bees for collecting honey; their nests or vespiaries are made either under ground, or attached to the branches of trees or the woodwork of houses. There are two groups of wasps, the social and the solitary, the common wasp of Europe (*vespa vulgaris*, Fabr.) and our hornets being good examples of the former, and our common mud wasp (*eumenes fraterna*, Say) of the latter. The social wasps live in large communities, in nests either in the ground or on trees, most of the individuals being sterile females, the neuters or workers, which in the perfect nest do most of the work as builders, soldiers, providers, and nurses; the males perform no work, though, according to the younger Huber, they keep the nest free from dirt and rubbish and carry away the bodies of those which die; the workers are winged and provided with stings, and are distinguished from the females or queens by their much smaller size. These nests rival those of the bee in ingenuity of construction; though well provided with the means of excavating a nest, they will often make use of the deserted burrow of a field mouse to save themselves the trouble of burrowing. The nest of the social ground wasps has generally an entrance gallery about an inch in diameter and several inches long in a zigzag direction, leading to a central chamber 1 to 2 feet in diameter when finished; for details as to the internal structure and economy of such a nest, see "Proceedings of the Boston Society of Natural History," vol. vii., pp. 411-418 (Nov. 1860). The nest of the social tree wasp is made of paper-like material, and arranged as described under HORNET. The whole society are destroyed by cold weather, except a few young impregnated females, which pass the winter in a torpid state; each of these survivors in the ensuing spring may be seen prying into every hole in a hedge or bank to find a suitable place for a nest; having made one in the ground or on a tree, the female lays a few eggs, the larvæ from which are fed by herself alone; this first brood are all workers, which on reaching their full growth relieve the queen of all labor, and by the further deposition of eggs the colony rapidly increases; the males and perfect females do not make their appearance until the end of summer; a large nest contains 300 or 400. The larvæ are fleshy grubs, without feet and therefore helpless, and are fed daily by the workers, which prepare food for them in their stomachs; they are placed head downward in the cells, which are closed when they are about to pass into the nymph state. They do not use the same nest a second season; they are remarkably attached to their young, never deserting them or abandoning the nest. The nests of the solitary wasps are made of clay or sand, and attached to walls and palings, though a few species burrow in sandy ground; they construct several cells close together, each containing a larva and a supply of living or torpid insects for its food, as stated under SAND WASP; in these nests there are only males and perfect females. Wasps are very voracious and omnivorous, feeding on insects, meat, fruits, honey, and other sweets; so carnivorous are they, that in some parts of Europe the butchers are glad to have them about their stalls for their services in keeping off the meat flies; they are very irritable, and sting from the slightest provocation; these wounds are very painful, and are best treated by ammoniated lotions; they are savage, and fond of attacking bees either on the wing or in their hives, one wasp being a match for 3 bees, and one in its reckless daring not hesitating to attack a host of the latter; they are swift and long continuing fliers. Like the bees they are infested by hymenopterous parasites, ichneumon flies of the genus *xenos* (Rossi), which deposit their tiny eggs in their bodies, the larvæ from which live between the rings on the back. A few species lay up honey like the bees; a Brazilian wasp (*myropetra scutellaris*, White) makes a brownish red honey, which when newly made has hardly any taste or odor; the honey of wasps, as of bees, is sometimes poisonous, producing a kind of raving delirium. An English species (*V. Britannica*, Leach) suspends its fine paper-like structure from the branch of a tree, generally the silver fir. The *polistes nidulans* (Fabr.), of Brazil and Guiana, makes a nest of a beautiful, polished, white pasteboard, so solid as to bid defiance to the sun and rains of the tropics; it is suspended on the highest branches of the trees, swinging freely on the twig which passes through the upper part, and entirely beyond the reach of monkeys, which would otherwise destroy it in search of honey. In tropical regions the societies do not perish in the winter season, but the females emigrate to a distance and establish new colonies. Our common paper-making wasp is the *polistes fuscata* (Fabr.), of a general brown color. The common mud wasp (*E. fraterna*, Say) makes its cells of clay, plastering it against the outer or inner walls of houses; each cell contains a single egg, and a supply of living spiders for the young; other species use flies for the same purpose.—These ferocious and predatory insects are remarkable for the very slight stalk which unites the thoracic and abdominal regions. As they not only destroy bees and steal honey, but injure fruit by their gnawings, farmers are generally glad to destroy them when an opportunity offers. This may be effected by hot water, sulphurous vapors, or common smoke; or the vapor of ether or chloroform may be introduced, when the nest may be dug up or stripped from the trees, and be handled with impunity.

WAT TYLER. See RICHARD II.

WATAUGA, a N. W. co. of N. C., bordering on Tenn., and drained by the Watauga river and its tributaries; area, 550 sq. m.; pop. in 1860, 4,957, of whom 104 were slaves. The surface is generally mountainous; the Alleghanies form the E. boundary, Iron mountain extends along the W. border, and Yellowstone mountain occupies the S. part. The soil of the valleys is very fertile. The productions in 1850 were 69,211 bushels of Indian corn, 54,747 of oats, and 2,774 tons of hay. There were 6 churches, and 520 pupils attending public schools. Iron ore is found. Capital, Broome.

WATCHES. See CLOCKS AND WATCHES.

WATER (Ger. *Wasser;* Gr. ὕδωρ), primarily and specifically, the name of the most abundant liquid upon or about the surface of our globe, which is so well known that an exact physical definition of it is unnecessary. In this use, the name is appropriated to the particular condition of this substance, the liquid, which is the most familiar to inhabitants of the temperate and torrid regions of the earth; but the name is extended, in a generic sense, to the same substance in all the states, solid, liquid, or other, in which it may be met with. As a liquid, water forms the principal mass of oceans, lakes, rivers, &c.; while in the solid state, to which it passes as often as its temperature descends to 32° F., it appears in the forms of ice and snow, hail and hoar frost being included under the former of these. Accordingly, it continually presents itself in the forms of ice and snow upon all those portions of the earth's surface which lie in an atmosphere constantly or almost constantly at or below 32°, or which, in other words, lie above the "limit of perpetual snow;" hence, in temperate latitudes, covering the tops of high mountains, and in the arctic regions almost the entire surface of land and sea; while in certain parts it accumulates in glaciers, icebergs, or other masses, to a depth and extent quite commensurate with those of mountains, or, as in parts of Greenland, of immense table lands. (See Glacier.) In the aëriform condition, or that of vapor, water continually exhales from the surfaces of masses of it, and from most bodies containing it, upon the surface of the earth, arising in invisible form, and in such quantities as to maintain an atmosphere of vapor, blended with the common air, and which envelops the entire globe to a depth of certainly from 5 to 8 miles; while portions of this vapor atmosphere are almost continually restored to the liquid condition and to the surface of the earth, either in the form of rain, hail, or snow, through the intermediate form of cloud (of which latter mist and fog are also examples), or directly in deposits of dew. (See Atmosphere, Cloud, Dew, Evaporation, Fog, Hail, Rain, and Snow.) Water in the liquid condition, and in more or less continuous mass, exists also in immense quantities within the earth, forming at various depths veins or streams, and also more stationary collections within gravelly or other loose strata, and from any of which, upon perforating to them, it ascends in the common or artesian wells; in some instances, indeed, it forms actual subterranean rivers and lakes; while by capillary action it is disseminated through and in some quantity retained in all rocks that are sufficiently porous, and probably all soils. Still further, water becomes in various proportions a component in many crystalline minerals, its presence in them being disguised by its assuming the solid state. Thus, not only is water one of the chief inorganic constituents of known portions of the globe, but it is also one of the substances most influential in determining the physical condition in which the globe is found (see also Geology), and in fitting it for the maintenance of vegetable and animal life. Again, in both plants and animals its presence in very large proportion is, as a rule having few exceptions, indispensable to all those operations on which the manifestation of life, with its continuance by nutrition and reproduction, depends. Of the sap or common juices of plants, and of their fruits when these are not solid, it constitutes all but a very small percentage; and in the disguised or solidified form it appears to be an important component of the woody tissue, and of very many vegetable products, such as starch and sugar. In animal, including human bodies, like facts hold in a still more marked degree; at least 77 parts in 100 of human blood being water uncombined, while with that enclosed within the tissues, and that existing solidified in the same and in the organized materials of the blood, it results that at the lowest estimate full five sixths of a living human body is simply water. Indeed, the structures of the body contain water in the ratio in which their activity is greater; so that the specific gravity of the apparently solid brain is really less than that of the liquid blood which circulates in and nourishes it, this result being, however, in part due to lightness of the cerebral fatty matters.—Pure water is inodorous and tasteless. In small masses or quantities it appears also to be colorless; but it is now known that the color is then merely inappreciable, and that, however pure it be made, water has, like air, a proper but very faint color of its own. Professor Tyndall, who had before shown that the electric light which, when simply thrown upon a white screen, is white, is rendered distinctly yellowish green or green when thrown through a thickness of 20 feet of water, contained in a tin tube of that length and closed with glass plates at the ends, in 1861 repeated the experiment with a tube only 15 inches long divided lengthwise and one half filled with water; this half gave upon the screen a greenish semicircle, while that answering to the empty half was white. It is probable that the actual color of water, as of solutions experimented on in wedge-shaped glasses, varies with the thickness or depth of the mass observed, the change being from a yellowish green or green, through greenish blue, to a deep blue; though, doubtless, a part of the very deep color assumed by the water of the ocean is due to certain mineral ingredients in solution in it. The color of ice, like that of water, appears to range with increasing thickness from greenish to blue; while in pure watery vapor, whatever the thickness, no color has yet been detected. Since pure water is itself taken as the standard with the weight of which those of all solid and all other liquid bodies are compared, its specific gravity is 1.000. (See Gravity, Specific.) A cubic inch of pure water, at a temperature of 62° F., and barometric pressure of 30 inches, weighs 252.458 grs. troy; so that its weight is almost precisely 815 times that of air at the like temperature and pressure. In ordinary calculations, for estimating the weight of bodies by reference to that of water, a cubic foot of this liquid is conveniently rated at 1,000 oz. avoirdupois, or 62½ lbs.; or in the proportion by the French scales, and equally easy of retention in the memory, of one gramme weight to the cubic centimetre in measure. Water is an extremely imperfect conductor of heat; it is a tolerable conductor of electricity, though not among the best. (See Electricity, and Heat.) The index of refraction of water (see Optics) is 1.336; that of ice, 1.309. In reference to magnetism, water is one of the diamagnetic substances, having its place in the scale above gold, but below antimony. The temperature at which water vaporizes in volumes, *i. e.*, boils, is, as in the case of other liquids, subject to great variation and from several causes, the chief of these being in the amount of pressure upon its surface (see Boiling Point, and Steam); at a barometric pressure of 29.92 inches, it is 212° F. The point at which water solidifies or freezes is susceptible only of very slight variation; it is, under ordinary conditions, at 32° of Fahrenheit's, and at the zero of most other scales. (See THERMOMETER.) In freezing, water has been observed to crystallize generally in prisms of the regular hexagonal system; and in the first and separate formation, these crystals tend to arise at angles of 60° and 120° with each other. Capt. Scoresby found that water congealed in the arctic regions in a variety of geometrical forms, of which he enumerates five—the lamellar, the stelliform (which he found the most common), the regular hexagon, aggregates of hexagons, and finally combinations of these with spines or radii. Ice is, when pure and compact, highly transparent; it is a poor conductor of heat, a non-conductor of electricity, and by friction is rendered electric; it has but one axis of double refraction. (See POLARIZATION.) The occurrence of the maximum density of water at about 39.5°, and its expansion both ways from this point, when cooled as well as when heated, with results of this property, are referred to under EXPANSION, and ICE. The density of ice at or near the temperature of its formation is not far from 0.92; hence it floats with considerable buoyancy, as is seen in the proportion of their total depth to which icebergs rise above the surface of the ocean. Although a gradual and complete solidification of entire rivers, lakes, and oceans, in all latitudes in which the cold of winter is considerable, would doubtless occur in case the specific gravity of ice were greater than that of water, and a condition of things quite opposed to the continuance of life in such regions would thus result, yet the opinion that water, in thus expanding in the act of freezing, constitutes an anomaly or remarkable exception to the law governing changes of state of bodies in general, is lately believed to be erroneous. In founderies and factories, it is continually to be observed that the pigs or bars of iron, lead, tin, zinc, copper, gold, and silver float upon the same metals already in the melted or liquid condition; and like facts are observed in respect to tallow, wax, pitch, rosin, sulphur, &c. Hence, it is doubtless the fact that solid bodies generally, which are capable of fusion, have their particles brought into closer aggregation by the change from the solid to the liquid state; and that, conversely, in passing from the liquid to the solid state, at some point in the descent of temperature their particles take a new arrangement, preparatory to or in the act of crystallizing, in virtue of which they are fixed at slightly greater distances from each other. Of course, when either the solid is cooled much below its solidifying point, or the liquid heated much above it, their relations of density may be again changed. Vapor is given off by water or ice at all temperatures; the tension of this at 25.6° below zero is sufficient to support $\frac{1}{30}$ of an inch of mercury; at 32° it supports .184; at 62°, .567; at 152°, 7.933; and at 182°, 15.96 inches of mercury. In reference to the compressibility of water, see COMPRESSION; and in reference to its mechanical phenomena generally, see HYDRO-MECHANICS. Recent observations give the coefficient of expansion of ice at .00006466 for 1° R. (=2.25° F.), or an amount nearly twice that of lead, and more than double that of any other solid. Melloni finds that ice absorbs all the rays of heat emitted by copper at 212°, transmitting none; while of heat from platinum at 752°, or nearly a red heat, it transmits only .005; the heat in these cases is converted within the mass to the work of liquefying the ice.—Chemically, water is a protoxide of hydrogen, or a definite compound of the gases hydrogen and oxygen, in the proportion of one equivalent of each; its symbol, accordingly, is HO. By the ancients it was regarded as an element, or simple substance, one of the four which they supposed to be such; and in common language it is still frequently spoken of as an element. The honor of the discovery that water is a compound body of definite chemical composition—a discovery among the most important in the history of chemistry—has been claimed in favor severally of Cavendish, Watt, and Lavoisier; and about the year 1839 a long and somewhat bitter controversy on this subject took place, Arago, in his eulogium of Watt before the French academy, charging Cavendish with claiming as his own a discovery only learned by him from a letter written by Watt to Dr. Priestley. The weight of the evidence from various sources, however, since published on the subject, has led chemists generally to the conclusion that, though both the other claimants undoubtedly did much toward elucidating the nature of water, yet to Cavendish alone belongs the honor of having made the positive discovery of its composition. In the year 1781 he determined by experiments that the union of hydrogen and oxygen in the way of combustion results in producing water. Of these gases, in the order named, in equal volume and under the same temperature and pressure, the weights are as 1 to 16. Humboldt and Gay-Lussac first determined that the combination of these gases in forming water is that of two volumes of the former with one of the latter. Hence the weights of the combining equivalents are, 1 of hydrogen, 8 of oxygen; and according to the now commonly received view in chemistry, these are to be taken as their lowest combining proportions, or true equivalents. The union of the two gases is an instance of true combustion, in which the hydrogen plays the part of the combustible body, or fuel; and according to the quantity of the gases mixed, and the mode of starting their combination, this may be attended with more or less violent explosion. In this mode of determining the composition of water, which is that of synthesis, the gases being mixed in due proportion, their union is commenced at any point in the mixture by application of a flame, of a white-hot or red-hot wire, or of the electric spark; and by the heat evolved the process is rapidly carried through the entire volume. Any excess of either element over the proportions stated remains uncombined; and if the gases were enclosed in a glass vessel opening below into mercury, their sudden disappearance in an extremely small volume of water is rendered evident by the small drops or slight mist of that liquid appearing on the inside of the glass, while the mercury mounts into the vacuum left, thus filling almost the entire vessel. Union of the gases can also be secured by the heat evolved by sudden and heavy pressure; but a gradually increasing pressure, even up to near 2,250 lbs. to the square inch, fails of such effect. If a jet of the mixed gases be allowed to flow upon spongy platinum, or upon a coil of very fine platinum wire, or if either of these be introduced into the mixture, the condensation of the gases upon or within the pores of the metal secures their ignition, with production of water. In fact, it is found that a perfectly clean strip of platinum introduced into the gases suffices to determine their union; and among other substances having the same property, iridium sponge or "black" is found even more effective than that of platinum; palladium, somewhat less active; while gold or silver suitably prepared, copper, nickel, cobalt, iron, fresh charcoal, pumice stone, porcelain, rock crystal, and glass, at various temperatures below redness, but not either lead or mercury, also set up the combination of the elements of water. Various organic substances in a state of spontaneous decomposition also cause these gases at common temperatures to combine. When a jet of hydrogen is ignited in oxygen or common air, it burns with a faint bluish flame, and water condenses on any cold surface, as that of a bell glass, held over it. Water in like manner results from the burning in air of the compounds of carbon and hydrogen, and hence condenses on a cold surface held over a gas jet, the flame of a lamp, &c. If wholly collected and estimated, in any of these experiments, the weight of the water is precisely equal to the sum of the weights of the gases which disappear in combustion. The composition of water is also shown by analysis, *i. e.*, by the separation of one or both the elements, and in many ways. Water is not decomposable by heat alone; but several of the non-oxidizable metals, and especially platinum, decompose it at a very high temperature. The alkali metals at ordinary temperatures, carbon, the metals of the earths, molybdenum, chromium, uranium, manganese, zinc, tin, cadmium, iron, cobalt, and nickel, at a low red heat, and antimony, bismuth, lead, and copper, at a strong red heat, take up the oxygen of water, and liberate the hydrogen. In the presence of various acids, the hydrogen of water is set free by most of the metals of the earths, by manganese, cadmium, zinc, tin, iron, cobalt, and nickel; and this principle is applied in the common process for procuring hydrogen, namely, by action of dilute sulphuric acid on zinc or iron. (See HYDROGEN.) Chlorine, under the influence of light, or at a red heat, combines with the hydrogen of water, forming hydrochloric acid, and setting the oxygen free. When water is under certain circumstances brought in contact with phosphorus, phosphide of potassium, &c., both its constituents enter separately into new compounds. But the most convenient and readily understood analysis of water is effected when the two poles of a galvanic battery of sufficient intensity are made to terminate in a body of this liquid, rendered a conductor by being acidulated; glass tubes or vessels containing water being inverted over the respective poles, oxygen is liberated and collected at the positive, and hydrogen at the negative pole, the nature of the gases being readily determined, and the volume of the hydrogen being just double that of the oxygen. (See ELECTRO-DYNAMICS.)—Water forms, with some simple substances, and with many acids, bases, and salts, definite chemical compounds, called hydrates. Of the first sort, two are known, the hydrates of bromine and chlorine, each of which contains 10 equivalents of water, and is a solid. With almost every acid water forms at least one hydrate, and with many of them two or more. Certain acids are known only in the condition of hydrates. In case of acids having more than one hydrate, that one the number of equivalents of water in which is equal to the equivalents of base in the normal salts of such acid, and in which the water itself seems to play the part of a base, is usually of great stability; when sufficiently heated, this hydrated acid often evaporates unchanged, rather than part with the water it contains. Of this class, mono-hydrated sulphuric acid (SO_3, HO) is one of the best examples. The other acid hydrates are generally less stable; such of them as crystallize part, when heated, with a portion of the water combined with them, and are converted into hydrates of the first class. The water thus apparently essential to the crystalline condition, and separable by heat or otherwise without change of the real nature of the compound, and the water in like manner essential to the crystallization of salts, is called "water of crystallization." Examples are the equivalents of water placed last in these expressions for crystallized sulphuric acid and crystallized sulphate of magnesia: SO_3, HO+HO, and MgO, SO_3, HO+6HO. With the alkaline, alkaline earthy, and some other bases, water forms a series of stable hydrates, the number of equivalents of water equalling those of acid in their normal salts, so that in these it seems to act as an acid. Examples are caustic potash and slaked lime (KO, HO, and CaO, HO), the first of which evaporates at a red heat undecomposed. Among the instances of higher degrees of hydration, potash forms crystals containing 5, and baryta 9, equivalents of water. Nearly all salts, both simple and double, form at least one hydrate, and many of them two or more; in the latter case, there is usually one more stable than the rest. When they contain more than one equivalent of water, the last of these is usually retained with much greater force than the others. Thus, the sulphate of magnesia, above given, loses at 270° F. the 6 equivalents of water of crystallization, while the 7th separates only at 460° F. The hydrated salts are obtained either by bringing the anhydrous salts into contact with water or damp air, or by crystallizing them from their aqueous solutions. They may be made to lose the combined water by heating, in which case those readily soluble, as in the familiar instance of alum, often liquefy in their water of crystallization, which then evaporates, leaving the salt anhydrous; or in many instances, when placed in dry air, they effloresce by gradual loss of the water, and assume the form of a dry powder; while in certain cases, as with carbonate and sulphate of soda, uninjured crystals are preserved indefinitely in the air, but efflorescence commences as soon as the crystal is scratched or otherwise injured. The state of combination of the water in hydrates is not well understood, and the effect varies much. In many of them, the water appears scarcely to affect the chemical reactions of the acid, base, or salt with which it is combined, its only effect being upon the physical properties, as shown in crystallization, specific gravity, &c. In other instances, the chemical reactions of the hydrate differ completely from those of the anhydrous substance. Thus, certain feeble acids, as the silicic, stannic, and antimonic, lose when deprived of water their power of combining with alkalies; while the converse is true, in like case, of some bases. The combination of many anhydrous acids or bases, and of some salts, with water, takes place with great energy, frequently with considerable rise of temperature; and of some of the hydrates of the stronger acids, when brought in contact with water, the same is true. When 4 parts of anhydrous sulphuric acid are mixed with 1 of water, explosion, with emission of light, takes place, and the compound is converted into vapor; 4 parts oil of vitriol with 1 of water raise the temperature from 32° to 212° F.; and lime slaked with a small proportionate quantity of water often becomes so heated as to set fire to wood, and to inflame gunpowder. —In the formation of hydrates water combines in definite proportions, or in the strict chemical sense; but beside this it has the power of taking into a common volume with itself, in or under certain quantities, any one or more of a great number of other substances; to this end, if they are solid, disintegrating and causing them to disappear from the solid state, in fact rendering them for the time liquid, like itself. If the body thus disappearing in water was previously a solid, it is common to say that the water "dissolves" it; if a liquid, that the water "mixes with" it; if a gas, or a vapor other than aqueous, that the water "absorbs" it. In most instances, however, and probably in all, the essential nature of these three processes is the same. What occurs is a blending or interfusing of some other substance through the water, the disintegrating to this end of the body, if previously solid, being merely accidental. In respect to quantity, there is for each body (except in case of many liquids) an upper limit beyond which under given conditions no more of that substance will be taken up by a given weight of water otherwise pure; but there is for almost any such substance no lower limit, each being taken up in any quantity below its maximum, down to an amount quite infinitesimal. Thus, this action appears to be one intermediate between those which are strictly either chemical or physical. Being a process of essentially the same nature, whatever the previous state of the body affected by it, it may properly, in case of solids, liquids, and gases alike, take the name of solution. Other liquids also to a greater or less extent dissolve solid, liquid, and gaseous bodies; but water possesses among liquids by far the most general, though still not a universal, solvent power. Among the bodies which it dissolves, in quantities sensible or otherwise to be detected, are some of the non-gaseous and non-metallic elements, as iodine, bromine, chlorine, and phosphorus; most or all of the metals in extremely small quantities; of inorganic compounds, most acids, the alkalies, earths, and some other bases, and most salts, simple or complex; of organic bodies, a very great number, consisting of acids, bases, salts, and also neutral compounds, as sugar and dextrine; and finally, in some proportion, all gases, whether elements or compounds. Of carbonic acid gas, water is under ordinary temperature and pressure capable of receiving slightly more than its own volume, and of very many other gases at least or nearly its own volume; but of a few, such as oxygen, nitrogen, and hydrogen, it can absorb no more than from $\frac{1}{20}$ down to $\frac{1}{50}$ of its volume. On the other hand, of gaseous hydrochloric acid it dissolves 516, and of ammonia 780 volumes. The solution of a gas is always of greater bulk than the water employed; its specific gravity is also generally higher than before, but sometimes, as in the case of liquid ammonia, it is less. At a given temperature, water absorbs nearly the same volume of any gas, under whatever pressure the latter may be at the time. Hence, by a compression exceeding the atmospheric pressure, water is made to take up a proportionally greater amount by weight of a given gas; and by exhausting the air from over it, it may be in part deprived of the amount it can hold under the usual pressure. The separation of the gas by the latter means is, however, never quite complete; of the very soluble gases, as hydrochloric acid, but a small proportion can thus be removed, and the remaining solution mainly evaporates unchanged. By applying heat, a portion of any dissolved gas is expelled; and by continued boiling, the less soluble gases, as well as ammonia, may be almost entirely removed. The introduction of other soluble gases, liquids, or solids into the solution of a gas, usually serves to expel a part, and sometimes almost the whole, of the gas previously dissolved. When water holding in solution solids, or other liquids, as in case of sea water, wines, &c., freezes, the ice formed is really almost perfectly pure or free from intermixture; and though its crystals may mechanically enclose a portion of the substances before dissolved, these if solids more commonly separate, perhaps concentrated in a mother liquor which does not freeze; while if liquids, they may separate, and, if the cold be sufficient, also separately congeal. Gases dissolved in water also separate when the latter is frozen, often remaining imprisoned in the ice, in form of minute bubbles. Liquids generally, if miscible with water, can mix with it in any proportion; a few of them however, especially among those of an organic nature, as chloroform, dissolve in water only in fixed and generally small proportion. In reference to temperature, the solution of solids presents four cases: 1, of certain solids, nearly the same quantity is dissolved at all temperatures, common salt deviating but slightly from this rule; 2, most commonly the solubility increases with temperature, sometimes in direct proportion to it, and sometimes much more rapidly; 3, most rarely, the solubility diminishes with the rise of temperature, examples being found in lime, citrate of lime, &c., solutions of which, saturated in the cold, deposit part of the dissolved salt when heated; 4, the solubility first increases rapidly with temperature, up to a certain point, and afterward diminishes, as in case of crystallized sulphate of soda, of which the maximum solubility, 322 parts of the salt to 100 of water, is at 91.4° F., while at 217.7° only 210.2 parts, and at 64.4° no more than 48 parts of the salt dissolve. Water which has taken up as much of any body as, under its given condition of temperature and pressure, it can dissolve, is said to be "saturated" (*i. e.*, for such condition); if from the saturated solution any water be removed by spontaneous or artificial evaporation, a corresponding portion of the dissolved substance must be set free or deposited by it, and in amorphous or crystalline form according to the tendency of the substance and the conditions; in cases of the latter sort, some of the most beautiful specimens of crystals are obtained by careful evaporation. Solutions already saturated with one substance can in many instances dissolve considerable quantities of some other, the deposition of a part of the first sometimes, but not always, attending the process; in other cases, the addition of a second substance enables the solution to take up an additional quantity of the first. Thus, the solubility of nitre is increased by common salt or nitrate of lime in the solution; and that of gypsum also by the presence of common salt. The degree of solubility of solids varies within wide limits, from that of hydrated sulphate of magnesia (Epsom salts), of which at 206.6° F. 644.4 parts dissolve in 100 of water, to that of sulphate of baryta, 1 part of which requires to dissolve it 43,000 parts of water.—As a consequence of the wide range of solvent power exerted by water, it necessarily follows that in nature pure water is never to be met with. Indeed, the vapor arising from the ocean carries with it a sufficient quantity of common salt, and perhaps of other minerals that are held in solution in its waters, to render a seaside and an inland atmosphere very different in their effects upon the human system, in health and in disease. So, in the first distillation of water from any source, a small portion of the substances it held in solution passes over with it; and to obtain water in a state nearly approaching to absolute purity, repeated distillations are necessary; while even then the object aimed at is likely to be prevented by the ability of water to dissolve very minute quantities of the metal or glass of vessels in which it may be received. But if the vapor diffused in the atmosphere were perfectly pure, it must at least from the moment of condensation, as also during its collection and fall in rain drops, be exerting its solvent power for the gases or other substances contained in the atmosphere. Thus rain water, even if collected before touching the ground, is found to contain in varying quantities carbonic acid, nitrogen, and oxygen gases, and probably always ammonia, while often small quantities of its carbonate and nitrate, and of free nitric acid, can be detected. The nitric acid and nitrate of ammonia are said to be found more abundantly during thunder storms, a result which has been referred to the action of electricity upon the elements present in the atmosphere. A trace of iodine has recently been detected in rain water, and also in the water of melted snow or sleet, amounting to from $\frac{1}{120}$ to $\frac{1}{80}$ of a grain to the cubic foot. In fact, whatever ingredients the atmosphere may contain will be brought down in greater or less quantity in rain and snow; so that in the water of either, and usually more in that which first falls, beside the substances above named, may be found also minute quantities of chlorine, iron, nickel, &c., often phosphoric acid, especially (it is said) when the wind blows from the west, and also a peculiar organic substance, chemically different from those afforded by plants, and which has been named pyrrhine. The first rain which falls also contains dust, soot, and other foreign matters which were suspended in the air, and which it washes down with it. For this reason, the rain first falling, even if directly caught by use of the cleanest surfaces or vessels, is still highly impure; but these foreign matters being after a time mainly removed, the rain, if continuing to fall, is much more nearly pure, almost as much so as distilled water, so that for most chemical and many other purposes it serves in place of the latter. Dew has dissolved in it a still larger proportion of the gases found in the atmosphere than has rain water. So soon as the water of rain or of melted snow comes in contact with the earth, and while it percolates through strata more or less porous, and more or less soluble, further changes in its composition commence and continue. Especially if it enters an alluvial or proper soil, recent observations lead to the conclusion that it will part to such soil with a considerable quantity of the ammonia, and of certain other gaseous and saline matters, contained in it; though in case of water highly impregnated with organic and inorganic matters, as that forming the leachings of ashes and manure heaps, this result is proved to occur in a much more marked degree; and the principle, it will be seen, is one of the highest importance in connection with the natural or artificial fertilizing of soils, and their consequent capacities of vegetable production. But at the same time with, and independently of, this depositing action, the opposite also will go on; the water will take up, according to the strata it passes through, and the nature of the acids or other active compounds which it may retain or acquire, various quantities of the solid matters with which it meets. In fact, the comparative purity of rain water gives it so much the greater capacity for taking up any soluble saline compounds in its way, and thus a relatively higher solvent power. Of the impurities which rain water retains and acquires in washing rocky strata, or percolating through these or through the earth, it may be said in a general way, though subject to some exceptions, that they are retained and accumulate in it until it rises again in springs; and that, beside often receiving large additions consisting of suspended earthy matters and of decaying organic substances, they are in some instances further increased by solvent action of the water on materials in the beds of the streams and rivers which it forms; until finally, the water discharging into the ocean, a still greater concentration of its saline matters then results through continual evaporation. And thus, though impure waters in a degree always contribute fertility to arable soils, yet, in a general way, the springs and rivers of the earth are continually subtracting from the land portions of certain minerals, many of which are essential to vegetation, in excess over what rains and snows can return of the like sorts to it; and in this way the oceans slowly rob the continents of fertility, the balance being in part restored, however, and more especially within a recent period, through the obtaining of salt from sea water, and the use of fish and of sea weeds or their ashes, but particularly of guano, for improving soils.—The carbonic acid which water receives from the air or other sources, enables it to act powerfully upon many rocks, especially those containing carbonates of lime and magnesia, which it would otherwise leave untouched; and the more powerful acids, as the sulphuric and hydrochloric, when present (though this is much more rarely), add largely to its saline constituents, particularly when passing over calcareous rocks. But the salts which water has received in one place, are frequently decomposed or precipitated by those of rocks or soils through which it subsequently passes, or by the action of organic matters, or the escape of gases which before held them in solution. Water percolating through strata comparatively insoluble, or flowing over such, as granite or sand, and more especially the greensand formation, takes up very little of saline matters, often not more than 5 grains to the gallon. This is the proportion in the water of the Tay, at Perth; while the waters of Loch Katrine show but half this quantity. Usually, however, the water finds strata and conditions more favorable to solution; and the salts may ordinarily range from 5 to 50 grains to the gallon. In general, river water may be regarded as a mixture of rain water, washing over rocks and soils, and of spring water, which has leached through them. Dr. Paris found the water of large springs usually purer than that of small ones; and as a matter of course, that of springs derived from the primitive formations, from silicious rocks or beds of gravel, to contain the least impregnation. The water of comparatively a few springs has thus almost the specific gravity of distilled water; that of the Malvern spring, for example, being as low as 1.0002. The water of all springs is more or less charged, and in a higher degree than that of other sources, with carbonic acid. Of this there are three principal sources: 1, the atmosphere; 2, decay of organic matters on the surface of and within soils penetrated by the water; 3, in volcanic districts, it would appear, an upward percolation of this gas set free by heat or changes within the earth—a cause to which is attributed the unusual quantity of the gas in the waters of Carlsbad, Spa, Pyrmont, Selters, and certain other springs in Europe.—In consequence of the intermixtures and changes of character to which water, as ordinarily met with, is thus subject, not only are its physical qualities, such as specific gravity, color, and taste, liable to great variation, but, as a matter of more direct interest, also its relations to the human economy, to health and disease. Distilled or rain water, in fact all highly pure waters, being quite tasteless, the small amounts of saline matters ordinarily to be found in good spring and well waters impart to these a slight degree of taste which really renders them agreeable to the palate, though through use the fact that there is a taste comes to be overlooked. Apart from this source of taste, and mainly different from it, is what is called the "freshness" or "briskness" of water, and which is necessary to render it really drinkable; this quality is due to, and increases with the amount of, gases held in the water, but especially of the carbonic acid gas—waters highly charged with the latter being actually sparkling when agitated, like champagne wines, and from the same cause. For drinking purposes, no water can have too much of gases, unless of sulphuretted hydrogen, the offensive odor of which sufficiently excludes it from common use; but when the saline constituents exceed about 50 grains to the gallon, the water acquires a more decidedly strong or mineral taste, and it may then be regarded as abnormal, and proportionally unfit for drinking. Even with a less quantity, this is true when the salts are mainly the carbonate and sulphate of lime, these substances acting to derange the digestive, absorbent, and secretory organs, and tending to the production of various forms of disease, among which dyspepsia, constipation, gravel, and stone are prominent. Such effects are experienced more especially by persons previously unaccustomed to the use of such waters; as in the case of those removing from the granite soils of New England to the limestone regions of many of the western states. It is the salts of lime and magnesia, particularly (both as most common and as most effective) the former, that give to certain waters, and more commonly those of wells, springs, and rivers in limestone districts, the quality known as "hardness." The lime and magnesia of such water, upon the introduction of any ordinary soap, decompose the latter, taking by substitution the place of the soda or potash which was its base, and thus forming in fact with the fatty acids a lime or magnesia soap, which being insoluble is precipitated, and appears in the water as a white curdy matter. Thus the cleansing property of ordinary suds is not obtained; the precipitated lime soap is greasy and tenacious, and it not only fails to cleanse, but entering the interstices of cloths, or in bathing obstinately closing the pores of the surface, it communicates also a hard and rough feeling. Hence it is that "hard waters" are rightly considered unfit for use in washing, as they really are for bathing or drinking, unless means be taken to render them soft; and hence also it is that the attempt to make any water wash with soap, or the use of the soap test, readily determines in this respect the quality of water, and its fitness for any of the purposes named. This soap test consists in observing the quantity of a prepared solution of soap, which must be added to a given measure of water, in order to produce a permanent lather. The holding in solution in considerable quantity of carbonate of lime, the most usual constituent of a hard water, requires the presence in the water of some excess of free carbonic acid, without which this salt is but sparingly soluble; hence, by boiling for some time, the carbonic acid being mainly expelled, the lime is deposited, forming the scale or incrustation upon the inside of kettles and of steam boilers in which such waters are repeatedly boiled.—Whenever the quantity of saline matters or acids of any kind is such as to impart to water a very distinct taste, or when the temperature of springs is by causes operating within the earth unusually elevated, so that in either case the ordinary action of drinkable water is replaced by an artificial action often availed of for medical purposes, the water becomes of the character commonly known as "mineral." (See MINERAL WATERS.) Owing to causes already referred to, the water of the ocean is in fact a mineral water, and one of the most remarkable of its class. Its saline constituents range from the 0.03218 to the 0.03718 part of its weight, its specific gravity varying from 1.0234 to 1.0286. According to Daubeny, the quantity of salts in the ocean is greater to the south than to the north of the equator, the medium saltness and density being near that line; and these facts are readily explained by the much less proportion in which the water of rivers is discharged into the southern seas. A like principle holds in reference to all lakes and inland seas, the waters of these varying very much in composition, according as they possess a free or imperfect outlet, or none. Thus, the water of some inland lakes, as those of the chain lying north of the United States, differs scarcely at all from river water; whereas, on the other hand, the most exaggerated saltness occurs in the case of lakes fed by waters highly charged with saline matters, and having no outlet. Such is the case with the Dead sea; the waters of its solitary river, the Jordan, constantly discharged into it, contain about 75 grains of solid matters to the gallon; but as very little of this can return by evaporation to the atmosphere, there is a constant accumulation of salts in the waters of this sea, until the quantity is now no less than 2,600 grains of solid constituents to the gallon, beside that saline deposits occur in the mud about its margins, and upon its bed. Thus also a lake lately discovered in northern Australia, and having no outlet, is highly charged with saline matters; and the waters of the Elton lake, in Russia, the length of which is 11 miles, breadth 8, and average depth 15 inches, show a crust of saline matters due to evaporation, so that they appear even in summer as if covered with snow. (See also GREAT SALT LAKE.) The waters of the Caspian sea, into which a large body of fresh water is discharged, and which has probably a subterranean outlet, have but 6.294 parts of saline matters to the 1,000, and a specific gravity of 1.00539; while those of the sea of Azof have of solid ingredients 11.879 parts to the 1,000, specific gravity 1.0097; the corresponding numbers for the Black sea being 17.666 and 1.01365. Certain salt lakes in Armenia and Egypt contain in solution a large quantity of carbonate and sulphate of soda, and by their evaporation furnish a saline mixture called natron. The acid springs of New Granada, of Canada, and of certain parts of the United States, derive their property and name from the considerable quantities of free mineral acids, most commonly the sulphuric, which they contain. According to Professor Porter's analysis, one gallon of the water of the Oak Orchard acid springs, in the town of Alabama in western

New York, contains of free sulphuric acid 133.312 grains, of proto-sulphate of iron 32.216, and of other sulphates not less than 34. Of the acid waters of Paramo de Ruiz, 0.255 per cent. consists of free sulphuric, and 0.33 of free hydrochloric acid; so that it has been proposed to employ these waters directly for the preparation of sulphate of quinine from the Peruvian bark obtained in the neighboring forests. Waters highly charged with certain salts, especially those of iron and silicates, frequently deposit portions of these within the interstices of wood, or of other organic bodies left for some time in them, converting them into masses resembling stone, and known as petrifactions. An example of strongly silicious waters is furnished by the Geysers.—Among waters not containing a sufficient amount of soluble ingredients to be ranked as mineral in character, may be conveniently distinguished with reference to ordinary uses three .classes, viz.: good drinkable waters, calcareous or distinctly hard waters, and those in which the lime salts are excessive. A good drinkable water may be recognized by the following characters: it is perfectly colorless and transparent; without smell or appreciable taste, but agreeable, and not insipid or flat; does not lose its clearness by boiling, and leaves a very slight residue upon evaporation. Rain water, not of the first fall, and the water of thawed snow or ice, are of course purest of all that offer for common use, and no others are really so well adapted as these for all culinary, cleansing, and mechanical purposes; but the lack of gases in these waters, unless they are artificially aërated, as by agitating them with air or other gases, or in other suitable manner, renders them less agreeable for drinking. Rain water, as too commonly collected upon roofs which have in the interim become covered with dust and other matters, is seldom of near the same purity as that caught in clean vessels directly as it falls. Of the foreign matters carried from the roofs into cisterns, some are soon precipitated; others undergo decomposition, depriving the water of a part of the oxygen it contained, and rendering it for the time more flat and unpalatable than usual. In towns and countries in which good drinkable water is scarce, however, cisterns for rain water are mainly relied on; at Cadiz every house is so supplied. Where cistern water is to be employed for drinking and culinary use, the first rain which falls, and which contains the washings of the roof, should always be allowed to run to waste—a method by which the deterioration of the water afterward caught is almost wholly avoided. By some authorities, waters containing a moderate proportion of saline matters, especially of salts of lime, are believed to be preferable for drinking purposes, as furnishing in a degree the mineral food required by the osseous system and the blood, and of which it is alleged that the supply afforded by solid foods alone is not in all cases sufficient. These materials the waters of streams directly fed by melting snows, and especially if in a granite region, are likely almost entirely to lack; hence the extreme purity of the water of certain streams of the Alps, and, from the latter cause at least, of most of the Scotch rivers. An opinion has been advanced that to this purity of the Alpine waters are due those lowered conditions of vitality manifested so frequently in the Swiss valleys in the production of goitre and scrofulous diseases generally, and the form of idiocy known as cretinism; while another view, quite the opposite, and for the present at least quite as probable, ascribes these maladies to the depressing effect of cold, humidity, and lack of sunlight in the valleys, with in many instances an actual excess of magnesian salts which in these the water has acquired. The waters of springs, wells, and rivers usually contain in variable quantities the chlorides, sulphates, and carbonates of lime, magnesia, soda, potash, and alumina, sometimes of other bases, with smaller quantities of certain phosphates and nitrates, and of silica, and (except often in case of springs) more or less of organic matters. The water of rivers being long exposed to the air, a gradual escape of carbonic acid from them very commonly occurs, resulting in a deposit of portions of certain salts, especially the calcareous. In this way, river water often becomes much softer than that of the springs and rills in which it had its sources. And hence, although the air dissolved in the surface water of rivers and oceans contains a larger percentage of oxygen than even that of the atmosphere, sometimes as much as 29.1 per cent., the water is still deficient in taste, vapid, and seldom, at least on first use, wholly agreeable for drinking. Of the oxygen gas of river and sea water, a part is absorbed from the air subsequently to the collection of the water in streams, while another portion is set free by the growth of aquatic plants; and whatever its source, it is a necessary condition of the existence of fishes and the other orders of living things found in such waters. Again, owing to the frequent loss, as now explained, of a portion of their saline matters, and to the numerous sources of intermixture of organic substances, and of extremely fine solid particles, as those of clay or other detritus, various mixtures of which constitute the slime, ooze, or mud of the beds of ponds and streams, and all of which materials are likely in some quantities to be held in suspension in the water, imparting to it the character of turbidity, it results that in rivers generally the quality of the water in reference to use is quite as much dependent on these matters in suspension as on those which it has dissolved, and in many instances much more so. In almost all waters of lakes, ponds, and rivers, living creatures of sensible size, as fish, frogs, shell fish, slugs, worms, &c., are to be found; and some of these also in the water of certain wells and springs. Although these animals impart their excretions to the water in which they live, yet these are either simply saline, entering like other saline substances into solution in the water, and no more hurtful; or, so far as they are organic, they are in a condition in which they rapidly decompose into the simplest and equally innoxious compounds. The creatures referred to, however, by subsisting on those smaller than themselves, and by in many instances consuming animal and vegetable matters in the earlier stages of decay in the water, unquestionably preserve it in a purer state than it would otherwise possess. Thus, the popular opinion respecting the advantage of having frogs or fish in wells and springs is correct; and on a larger scale, though far less effectually in the comparison, the creatures named contribute to the purity of lakes and streams. Among the foreign matters of river water, which may be classed among those held in suspension, and which are less obvious than those above named, and often wholly invisible, are living organisms, such as microscopic algæ, the decomposing substance of larger plants, and animalcules. Any of these, along with the bodies of fish, &c., if allowed to undergo gradual decay in the water, result on their way to the simplest and harmless combinations, as carbonic acid, ammonia, &c., in stages and forms of putrescent materials that, taken in certain quantities or for considerable time into the human system, are known to be productive of disease. To remove such matters from the water, however, and return them nearly or quite reduced to the harmless forms already referred to, even the various species of animalcules coöperate with the larger creatures living in the water. So far as any hurtful effect of the animalcules themselves upon the digestive organs or the general health is concerned, it may safely be said that the impression created in regard to them among the residents of certain cities has extremely slight grounds in fact, and is due mainly to the exaggerations of interested parties. It is more agreeable certainly to be able to remove both these and the suspended organic and earthy matters that may be present in the river or lake waters now in use in many cities, and this is accomplished by passing the water through proper filters; but the chief benefits of this process are often in the removal of the really deleterious organic matters, which, however, the public are not able so readily to comprehend. Doubtless some of the smaller animalcules pass through any ordinary filter; and as their ova and vegetable germs can pass through all, both may reappear in water that has been filtered and is then kept, as for a sea voyage. Of decaying animal and vegetable substances, the former, as containing more nitrogen, and tending more to putrefactive change, are the most objectionable. For detecting such substances, no test short of analysis can be perfectly relied on; but as a solution of permanganate of potash is decomposed and decolorized by it, it is safest to reject water which on mixture discharges the color from much of that reagent. Of all waters, those of stagnant pools and of marshes most abound in foreign and deleterious materials, especially those of vegetable and animal origin. They commonly contain and emit mephitic gases, and are to be regarded as always extremely unwholesome. In connection with the subject of such waters, the results of observations by Dr. G. C. Wittstein, lately presented before the Bavarian academy, possess much interest. The tendency to some shade of brown, sometimes almost black, of marsh waters or those of rivers into which they largely enter, is well known; and Dr. Wittstein is led to conclude that this color is due to the presence in such water of the ulmic or geic acids (products of vegetable decay, and ingredients of humus; see AGRICULTURAL CHEMISTRY) held in solution by alkalies. The amount of alkali, itself dependent on the nature of the bed or rock with which the water comes in contact, may thus determine the quantity of dissolved ulmine, and hence the color of the water. Such waters will therefore be soft as well as impure. Any deviation from the proper bluish color of water toward brown will show the presence of the ulmic acids; and if the water is running, so that it is continually renewed, it may be assumed also to be softer as its color approaches brown, and harder as it is more nearly blue. In the way of rendering marshy waters less unwholesome, the substitution of an active for an effete vegetation is advantageous, as diminishing both the decaying matters and noxious gases; and the growth in them of plants of a bitter or astringent kind, as bogbean and tormentil, is said greatly to lessen the tendency to disease in cattle drinking the waters.—The abundance of water furnished by small lakes and by rivers, has always presented an inducement to the inhabitants of large towns to secure from such sources their needful supply; and the practical resort to these sources is recently becoming more common. (See AQUEDUCT.) From the view of the many and variable accidental constituents of lake and river waters which has now been presented, it will be evident that considerations of palatableness and wholesomeness of the water render the selection of the source to be resorted to in a given case a matter of much importance, if not difficulty. The waters should be as free as practicable from organic matters; they should not be too hard, and they should be brisk. When the streams contain many or peculiar adventitious substances, especially such as the wastage of factories or chemical works, or those of the most revolting character, including the bodies of dead animals and the sewage of towns, they are obviously wholly unfit for use. Yet even such waters are in a few instances largely consumed, as in case of the Thames water used in parts of London. The table following presents the results of analyses of waters of various parts of the United States and of Europe, as taken from wells, rivers, and ponds, especially such among the latter as are resorted to for the supply of water to towns. In the analyses numbered 1 to 34 inclusive, the numbers standing in the columns under each constituent represent so many grains or parts of a grain of that constituent in a gallon of the particular sample of water, named in the same horizontal line at the left; in the remaining analyses, the figures denote the percentage of the constituent, or the number of parts of it in 100 of the water. Beside the substances in the table, water No. 14 contains 0.278 of lime, 0.356 of magnesia, 0.493 of potash, and 0.173 of soda, combined with silica and organic matter. No. 20 has also carbonate of potash; No. 21, 5.015 nitrate of lime, and 2.133 nitrate of magnesia; No. 30, 1.00 silicate of potash, 0.302 silicate of lime, and 0.5 silicate of magnesia; No. 35, no chloride of aluminum; No. 46, 4.06 silica, and 0.44 silicate of potash; No. 59, no oxide of manganese; No. 60, some carbonate of potash; No. 63, some phosphate of manganese, carbonate of potash, crenate and apocrenate of iron. Nos. 3, 4, 5, 6, and 7 are analyses made by Prof. Benjamin Silliman, jr., in 1845, for the authorities of Boston, on the occasion of selecting the source of supply of water for that city, No. 3 being the one finally chosen. Specimen No. 5 was taken at Watertown, Mass., and No. 6 at South Natick. Nos. 9, 10, and 11 are from ferruginous clay, overlying red sandstone, 9 and 11 being very hard waters. No. 12 is from Fairmount pond, the principal source of water supply for Philadelphia. No. 13 is the water supplied to Trenton, N. J. Nos. 15, 17, 18, 19, and 20 are from so many and the main sources of water supply of London. Of this, 19,907,480 gallons per day are derived from the Thames, and 25,978,445 gallons from other sources exclusive of wells. No. 16 is from the greensand formation, and has been proposed for the supply of London. No. 21 is from Highgate hill, and the enormous proportion of nitrates contained in it is to be accounted for by its contiguity to an old and extensive churchyard. No. 34 is from an artesian well in the London basin, and is of excellent quality. No. 23 supplies Aberdeen; No. 27, Perth; Nos. 28, 29, and 30, the towns named in the table; Nos. 30 and 31, Glasgow; while No. 33 was proposed for the last named town. Nos. 35 to 43, and 45 to 58, inclusive, are river waters. In case of No. 35, the river was at the time swollen and turbid; of 36, it was low and clear. In case of No. 37, taken near Vienna, the river was tolerably clear; No. 38, near Hamburg, turbid; No. 39, near Höchst, and 40, near Arendonck. No. 41 was procured near Lyons, in July, and 42 in February; No. 43, near Geneva, in April; No. 45, near Toulouse, in July; No. 46, near Orleans; No. 47, above Paris. In case of Nos. 48 and 49, the large proportion of common salt and sulphate of lime, and the small quantity of carbonate of lime, show clearly a degree of mixture of sea water; the former sample was taken near Exeter, the latter near Twickenham. Nos. 50 to 55, inclusive, are waters of rivers proceeding from glaciers. No. 62 is an example of water containing an unusual amount of sulphate of lime, and No. 63 of a very highly calcareous water.—Owing to the large number of bases, acids, or salts, or of two or more of these classes of compounds, that are usually present together in any natural water, whether of ordinary or of mineral character, the process of analysis of a water of either sort is among the most tedious and difficult. Gaseous constituents must be determined first, and they are best known when the water is freshly taken from its source. By evaporating a known volume of the water, drying the residue at 212° F., and weighing, the total amount of fixed matters is ascertained. Drying at 300°, if organic matter be present in the residue, it will char; and on being ignited in presence of air, the carbon will burn off; weighing after ignition, the loss in weight will give a near approximation to the amount of organic matter the water contained. The remainder, or mineral portion of the residue, can then be quantitatively analyzed in the manner pursued with any mixture of minerals; or to determine the several ingredients, separate portions of the water may be successively taken.—As already shown, the composition of the waters of rivers often varies greatly in different parts of their course; and obviously, considerable variation must in most instances occur with the changes of the seasons. Thus the Rhône near Geneva (analysis No. 43) in April, though containing almost precisely the same percentage of soluble constituents as near Lyons in February, differs entirely in their distribution, having at the former place only about half as much carbonate of lime as at the latter, but more than twice as large a proportion of sulphates, beside 2.38 parts of silica, which at Lyons has completely disappeared. The analyses of the Meuse (Nos. 39 and 40) present similar facts; while those of the Rhône (Nos. 41 and 42) show the variations at opposite seasons. Those of the Rhine (Nos. 35 and 36), though taken at the same season and at the same place (Bonn), show the difference of composition between a river in time of flood and when low and clear. When a river passes through a large town, owing to the great amount of both organic and mineral substances which is certain to find its way into it, especially if the town happens to be a manufacturing one, very considerable changes in composition may take place within a very short space. Thus the Seine, which before entering Paris contains only $\frac{1}{40}$ per cent. of mineral ingredients, has nearly doubled this proportion before leaving it, and has also much increased its impregnation with organic matter. The Thames near London, though differing less in the quantity of mineral ingredients above and below the city, receives so much organic matter from sewers, factories, &c., some of which

Places.	Cubic inches of nitrogen and oxygen.	Cubic inches of carbonic acid.	Specific gravity.	Chloride of potassium.	Chloride of sodium.	Chloride of calcium.	Chloride of magnesium.	Chloride of aluminium.	Sulphate of potassa.	Sulphate of soda.	Sulphate of lime.	Sulphate of magnesia.	Sulphate of alumina.
1. Croton	..	17.418	1.000060	..	0.167	0.372	..	0.166	..	0.153	0.235	..	..
2. Brooklyn	..	..	....	..	0.244	0.120	0.328	..	..	..	0.120	0.288	..
3. Cochituate	..	10.719	1.000118	0.038	0.032	0.031	0.076	..	..	..	..	0.102	..
4. Spot pond	..	9.516	1.000090	..	0.397	..	..	..	..	0.228	..	..	..
5. Charles river, Mass.	..	5.058	0.999840	..	0.198	..	..	..	0.031	0.083	0.681	0.135	..
6. " " "	..	0.464	1.000062	..	0.155	0.042	..	..	..	0.382	0.262	..	..
7. Mystic pond	..	10.313	1.000540	0.159	27.911	0.154	..	..	..	..	0.122	1.977	0.448
8. Well, Hartford	..	..	1.000810	..	11.162	6.522	2.396	..	..	..	3.902	..	..
9. " "	..	..	1.000100	..	..	2.282	1.272	..	..	..	1.744	..	..
10. " "	..	..	1.001060	..	15.481	10.498	2.419	..	..	..	5.208	..	..
11. Schuylkill	..	3.879	1.000016	..	0.147	..	0.009	..	..	..	..	0.057	..
12. Delaware	..	..	1.000710	0.012	0.107	..	..	..	..	.	0.186	..	..
13. Spring, Trenton	..	..	0.999720	1.021	..	..	..	..	..	..	0.009	..	..
14. Red river	..	..	....	..	38.100	..	..	..	..	..	36.100	33.200	..
15. Thames	..	..	....	..	1.560	..	..	..	..	..	2.730	..	..
16. Farnham	..	..	....	..	0.930	..	..	..	0.430	0.070	1.310	..	..
17. New river	..	14.490	....	..	1.730	..	..	..	1.110	1.490	3.230	..	..
18. E. London Water Co.	..	12.380	....	..	1.760	..	..	..	1.250	0.940	2.330	..	..
19. Kent Water Co.	..	10.150	....	0.660	2.240	..	..	..	..	..	3.160	..	..
20. Hampstead Water Co.	..	13.300	....	..	6.790	..	..	..	1.400	15.140	..	..	..
21. London well	..	..	....	..	1.204	0.739	..	..	2.131	1.189	..	..	..
22. Severn	..	..	....	..	0.730	..	0.660	..	0.390	0.390	0.520	..	..
23. Dee	..	..	....	0.670		..	..	..	..	..	0.121	0.323	..
24. Trent	..	..	....	..	17.630	..	..	..	..	..	21.550	..	..
25. Don	..	..	....	..	1.260	..	..	..	..	..	0.130	..	..
26. Clyde	..	..	....	..	0.540	..	0.400	..	1.940	1.940	0.260	..	..
27. Tay	..	..	....	0.955		..	..	..	..	..	0.874	0.278	..
28. Liverpool	..	..	....	..	1.560	..	..	..	..	..	1.000	..	..
29. Manchester	..	..	....	0.570	1.020	..	0.130	..	..	..	3.570	1.550	..
30. Preston	..	6.600	....	..	1.500	0.501	..	..	..	..	3.520	..	..
31. Loch Katrine	7.197	0.080	....	0.433		0.144	..	..	..	..	0.381	..	..
32. " "	6.646	0.053	....	..	0.290	0.160	..	..	..	..	0.560	..	..
33. Brockburn	..	..	....	0.720		..	0.344	..	..	..	0.946	0.284	..
34. Hatton	..	..	....	..	9.288	..	..	..	traces	10.456	..	..	..
35. Rhine	..	..	....	+3.890									..
36. "	..	..	....	1.450		..	..	..	..	0.160	2.380	1.810	..
37. Danube	..	..	....	trace	trace	trace	trace	..	0.200		0.290	1.370	..
38. Elbe	..	..	....	3.940				..	..	..	0.720		..
39. Meuse	..	..	....	..	1.500	..	..	..	..	..	1.220	0.430	..
40. "	..	..	....	..	0.920	..	..	..	..	..	1.240	0.120	..
41. Rhône	..	..	....	trace				..	..	..	0.600	trace	..
42. "	..	..	....	0.700				..	..	..	2.000	0.700	..
43. "	..	..	....	..	0.170	..	..	..	..	0.740	4.660	0.630	..
44. Lake of Geneva	..	..	....	..	..	..	0.900	..	..	..	2.060	3.100	..
45. Garonne	..	..	....	..	0.320	..	..	..	0.760	0.530	..	..	..
46. Loire	..	..	....	..	0.480	..	..	..	..	0.340	..	..	..
47. Seine	..	..	....	..	..	1.000	0.800	..	..	..	3.600	0.600	..
48. Exe	..	..	....	trace	6.050	..	0.900	..	0.110	..	4.340	0.230	..
49. Thames	..	..	....	..	2.340	..	.	..	0.950	..	3.700	..	..
50. Lütschine	..	..	....	..	..	..	..	..	..	0.730	3.070	1.490	..
51. Möll	..	..	....	..	0.090	..	..	..	..	trace	trace	trace	..
52. Oetz	..	..	....	..	0.040	..	..	..	..	..	1.301	trace	..
53. Aar	..	..	....	..	0.030	..	..	..	..	0.090	1.740	2.600	..
54. Arve	..	..	....	..	..	..	0.700	..	..	..	3.200	2.900	..
55. "	..	..	....	..	..	..	1.500	..	..	..	6.500	6.200	..
56. Bièvre	..	..	....	..	1.200	10.900	..	..	..	..	25.100	..	..
57. Thérouanne	..	..	....	..	..	3.600		..	..	..	2.000	..	..
58. Beuvionne	..	..	....	8.500			..	..	..	..	20.300	..	..
59. Arcueil	..	..	....	..	8.100			..	..	0.036	0.138	0.036	..
60. Grenelle	..	..	....	57.900		..	..	..	3.200		..	..	..
61. Scheldt	..	..	....	..	4.700	..	..	..	..	..	0.800		..
62. Well, Paris	..	..	....	..	42.000		30.000	..	..	..	132.000	..	..
63. Ste. Allyre	..	..	....	..	125.190	..	..	..	..	28.950	..	..	..

	Carbonate of soda.	Carbonate of lime.	Carbonate of magnesia.	Carbonate of iron.	Phosphate of alumina.	Phosphate of lime, iron, and manganese.	Alumina.	Sesquioxide of iron.	Sesquioxide of manganese.	Silica.	Nitrates.	Organic matter.	Loss.	Solid residue.	By whom analyzed.
1..	1.865	2.131	0.662	..	0.832	..	..	..	..	0.077	..	..	..	6.660	Silliman, jr.
2..	..	1.092	0.408	..	..	..	..	0.040	..	..	..	0.008	..	2.648	
3..	0.529	0.238	0.063	..	..	..	0.080	..	..	0.030	..	..	..	1.220	Silliman, jr.
4..	..	0.372	0.142	..	..	0.108	..	..	..	..	..	..	..	1.250	“
5..	0.712	0.497	0.130	..	0.083	..	..	..	..	..	..	..	..	2.550	“
6..	0.529	0.161	0.040	..	0.097	..	..	..	..	..	..	..	..	1.668	“
7..	..	0.170	0.989	..	0.281	..	..	..	..	0.556	..	..	..	33.683	“
8..	..	13.149	1.109	..	..	..	0.204		..	1.052	..	..	..	41.043	B. W. Bull.
9..	..	1.260	..	..	..	..	0.817	..	..	0.817	..	..	..	19.565	“
10..	..	..	8.815	..	..	..	traces		..	0.522	..	..	..	58.450	“
11..	1.644	1.872	0.351	..	..	..	..	..	..	0.080	..	..	..	4.260	Silliman, jr.
12..	..	1.300	0.890	..	..	0.142	trace	0.027	trace	0.497	..	0.635	..	3.535	Wurtz.
13..	..	..	..	..	..	0.145	trace	0.127	trace	0.756	..	0.558	..	3.608	“
14..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
15..	..	13.130	..	..	..	..	..	0.130	..	0.270	..	2.480	..	20.300	A. S. Taylor.
16..	..	0.230	0.640	..	..	0.880			..	0.990	trace	1.780	..	7.260	
17..	..	7.820	1.090	..	..	traces	traces	traces	..	0.500	0.020	2.790	..	19.580	Graham, Miller, and Hoffmann.
18..	..	10.160	1.510	..	..	0.470			..	0.620	0.720	4.120	..	23.510	
19..	..	11.640	1.280	..	..	traces	traces	traces	..	0.490	0.070	2.610	..	29.710	
20..	+1.800	4.950	3.530	..	..	traces	trace	trace	..	0.070	..	1.840	..	35.410	
21..	..	..	..	..	..	..	..	..	..	0.112	+7.148	..	..	12.523	Noad.
22..	..	0.500	..	..	..	0.180	0.320	..	..	0.320	..	0.450	..	3.750	Penny.
23..	..	0.850	..	..	..	0.080	..	..	..	0.140	..	1.816		4.000	Smith.
24..	..	0.320	5.660	..	..	trace	0.500		..	0.720	..	3.680	..	50.060	
25..	..	2.230	1.070	..	..	trace	0.270		..	0.520	..	3.060	..	8.540	
26..	..	2.520	0.720	..	..	0.310	0.280	trace	..	0.280	..	0.890	..	7.860	Penny.
27..	..	1.508	trace	..	..	0.102	..	..	..	0.070	..	1.240	..	5.027	Penny.
28..	..	0.760	0.110	..	..	0.240			..	0.150	..	1.400	..	5.420	
29..	..	..	..	..	..	..	0.750	..	..	0.880	..	1.250	..	9.720	
30..	..	2.203	1.209	0.150	..	0.200		..	..	+1.972	..	0.500	..	11.755	C. Calvert.
31..	..	..	0.216	..	..	trace	..	trace	..	0.170	..	0.900	..	2.244	Penny.
32..	..	..	trace	..	..	..	..	..	..	0.160	..	..	..	..	Miller.
33..	..	1.152	..	..	..	..	..	0.043	..	0.177	..	1.531	..	5.197	Penny.
34..	15.196	2.120	0.880	0.480	..	trace	..	..	..	0.050	..	..	..	38.600	Pollock.
35..	..	3.240	1.220	..	..	..	0.100	0.690	0.040	2.050	..	..	..	11.230	Bischof.
36..	..	9.460	0.650	..	..	..	..	0.280	..	0.890	..	..	..	17.080	“
37..	..	8.370	1.500	..	..	..	..	0.200	..	0.490	..	..	..	12.420	“
38..	..	6.980	0.390	..	..	..	0.120			0.540	..	..	..	12.690	“
39..	..	13.690	2.700	..	..	..	..	..	0.500	2.000	..	trace	..	22.040	Chandelon.
40..	..	3.210	0.550	..	..	..	..	..	0.230	0.280	..	..	..	6.550	“
41..	..	10.000	..	..	..	..	..	..	..	..	..	trace	..	10.600	[gault. Boussin-
42..	..	15.000	..	..	..	..	..	..	..	..	trace	trace	..	18 400	Dupasquier.
43..	..	7.890	0.490	..	..	..	0.390	..	..	2.380	0.850	..	..	18.200	Deville.
44..	..	7.200	0.700	..	..	..	..	..	..	0.100	..	0.600	..	15.200	Tingry.
45..	0.650	6.450	0.340	..	..	..	..	0.310	0.300	4.010	..	..	..	13.670	Deville.
46..	1.460	4.810	0.610	..	..	..	0.710	0.550	..	+4.500	..	..	..	13.460	“
47..	..	11.300	0.400	..	..	..	..	..	..	0.500	trace	trace	..	18.200	Bouchardat.
48..	..	1.280	0.090	..	..	..	..	..	..	trace	0.230	2.300	..	15.540	Herapath.
49..	..	18.230	1.470	..	..	..	trace	trace	..	0.390	..	4.970	..	32.050	Clark. [cher.
50..	..	4.050	0.190	..	..	..	0.100	..	..	0.350	..	..	..	9.980	Paggenste-
51..	..	0.840	0.350	..	..	..	trace	0.100	0.320	0.720	..	..	..	2.610	Schlagin-
52..	..	0.450	0.005	..	..	..	trace	..	..	0.870	..	..	..	3.520	“ [tweit.
53..	..	15.220	1.680	..	..	..	..	trace	..	0.270	..	trace	..	21.630	Paggenste-
54..	..	5.200	0.400	..	..	..	..	..	..	0.100	..	0.300	..	12.800	Tingry.[cher.
55..	..	8.300	1.200	..	..	..	..	..	..	0.200	..	0.400	..	24.300	“
56..	..	13.600	..	..	..	..	..	..	..	..	..	..	..	50.800	Colin.
57..	..	26.200	..	..	..	..	..	..	..	..	..	..	..	31.800	Bouchardat.
58..	..	25.700	..	..	..	..	..	..	..	..	..	..	..	54.500	Colin.
59..	..	1.100	3.940	..	..	..	+1.800				trace	trace	..	46.900	Boutron & [Henri.
60..	0.700	2.000	0.620	..	..	..	0.200		..	1.000	..	trace	..	13.500	“
61..	..	23.300	..	..	..	..	..	..	..	0.600	..	trace	..	29.400	Tordeux.
62..	..	33.000	..	..	..	..	..	..	..	2.000	3.000	trace	1.000	243.000	Poggiale.
63..	48.860	16.342	38.560	14.100	..	+4.620	..	..	..	39.000	..	1.300	..	464.000	Girardin.

is dissolved, while much is only held in suspension, as to render it highly offensive at some seasons, though previously to entering London it is a water of excellent quality. A general view of the composition of rivers shows carbonate of lime to be their principal mineral constituent, generally amounting to one half of the entire solid residue of the water, and sometimes forming $\frac{9}{10}$ of it; and this we find to be the very substance which is continually withdrawn from sea water for the production of the shells of mollusks and crustaceans, and the structures of the coral animals. It has been estimated that the quantity of this salt annually carried into the sea by the Rhine is sufficient for the formation of the shells of 332,539 millions of oysters. Next to carbonate of lime, its sulphate, or gypsum, occurs most abundantly in river waters. Being much more soluble than the carbonate, it would be found in much larger proportion, were it not that rocks containing it bear an exceedingly small proportion to limestone rocks; but wherever they exist, the rivers passing over them become impregnated. Thus the Arve, which, taking its rise in the valley of Chamouni, comes in contact with the great masses of gypsum of the western side of Mont Blanc, contains 6.5 parts of sulphate of lime and 6.2 parts of sulphate of magnesia to 8.3 parts of carbonate of lime (analysis 55); and the Red river, after traversing the plains of the Llano Estacado, much of the surface of which is covered with thick beds of gypsum, holds in solution .00185 of its weight of sulphate of lime, sulphate of magnesia, and chloride of sodium in nearly equal proportions, without any carbonate of lime. The chlorides but rarely form a considerable part of the constituents of rivers, unless near their mouths, where some mixture with sea water has taken place, as in the analyses of the Thames and Exe (Nos. 48 and 49). If the case were the reverse, a continual and rapid accumulation of salt, &c., would take place in the ocean, since the chlorides are not largely removed by marine animals and plants, as is the case with the carbonate and sulphate of lime. The organic matters carried into the sea by rivers are by no means insignificant in quantity; and they probably coöperate with those produced by the death of marine animals and plants, in decomposing the excess of sulphates, and restoring the equilibrium of composition in sea water. The water of lakes, agreeing generally with that of the principal rivers which feed them, can but seldom present any prominent peculiarity of composition (see analyses Nos. 43 and 44). The water of Lough Neagh in Ireland, which has the property of petrifying wood, or rather of causing its impregnation with iron, contains $\frac{1}{14,000}$ part only of soluble constituents, $\frac{1}{34}$ part of this being peroxide of iron, and about $\frac{1}{5}$ of it suspended matters, chiefly oxide of iron. Spring waters, in their passage through various rocks, come in contact with so great a variety of substances, that all the alkalies and alkaline earths, alumina, the oxides of iron, manganese, zinc, copper, and many other metals, carbonic, sulphuric, sulphurous, nitric, phosphoric, boracic, silicic, and hydrosulphuric acids, chlorine, bromine, iodine, fluorine, sulphur, hydrogen, carburetted hydrogen, oxygen, and nitrogen, as well as various organic substances, are to be found in one or the other of them. The longer the water remains in contact with the rocks, the greater is generally the quantity dissolved; but chloride of sodium and sulphate of lime, received while passing through beds of salt or gypsum (see SALT), are the only substances with which it becomes saturated. In limestone regions, the continued percolation of the water suffices to remove considerable portions of the rocks, forming great caverns; as in the case of the Mammoth cave of Kentucky, and of many of those in the German mountains; while in some instances the surface of the ground is from such cause eventually made to fall in. Bischof has calculated that the springs and rivers of the Teutoburger forest and the Haarstrang remove annually more than 1,000,000 cubic feet of limestone; and that the Pader springs alone could remove in 67 days a cone of limestone 150 feet in diameter at the base and 25 feet high. Though, save in some mineral waters, usually present in very small quantity, common salt is still, with the exception of carbonate of lime, the most invariably present constituent of spring waters. Its quantity is however usually only such as to aid in imparting palatableness to the water, without giving an appreciable taste. Springs near the sea in many instances receive a sufficient influx of uncorrected sea water to be rendered brackish; while on the other hand there are numerous instances of springs of perfectly fresh water rising at greater or less distances from shore in the midst of the waters of the ocean; of these, some remarkable and long celebrated examples occur in the gulf of Mexico.—The applications and uses of water are so multifarious, that any difficulty in the case must be rather in the way of finding any operations, either of nature or of art, in which it is not present, and does not play an important part. If the air were deprived of moisture, it would be harsh and irritating when breathed; without the presence of water in soils, that ultimate comminution, or perhaps solution, of their materials, requisite to their entrance into the rootlets of plants, would be impossible; and finally water becomes the indispensable solvent and vehicle by presence of which only can the materials of nutrition be introduced within the vessels of either vegetable or animal bodies, or can there undergo the requisite changes, be conveyed to the tissues to be nourished, and, when in the animal system finally broken down and rendered effete, be again absorbed, conveyed to the organs of excretion, and cast without the domain of life. Thus, water is in every way indispensable to the very continuance of vegetable and animal existence. The dews deposited from and rain falling through the atmosphere bring to the earth many of the substances needful to enable plants to form originally the organic materials on which animal life is subsequently maintained, the most important of these being in fact carbonic acid, the water itself, and ammonia, the presence and value of the last of these having been first shown in Liebig's discovery that it furnishes a chief source of the nitrogen entering into the albuminous vegetable compounds. In countries in which rain is rare or unknown, vegetation can be supported only by laborious artificial irrigation, as is true in parts of Egypt, India, &c.; and a country destitute of springs and rivers becomes comparatively uninhabitable, as in case of the desert of Sahara; its oases, however, when within them the supply of water is even limited, becoming centres of population. The solvent power of water lies at the foundation of a great proportion of the processes employed in the arts and manufactures, and in analytical chemistry. Without rivers and oceans but little of the commerce of the world could be carried on; and, indeed, without water, our most rapid and efficient means of land transportation, the railroad worked by steam power, would be unavailable. Water is also, through its weight and momentum, one of the most important sources of mechanical power; the estimates of M. Daubrée showing that the motive force of the streams of Europe is equal to that of from 273,508,970 to 364,678,620 horses working incessantly during the entire year. The agency of water in a geological point of view, as in washing away cliffs, excavating valleys, and otherwise modifying the earth's surface, has produced in past ages effects of almost incredible magnitude; it has in fact removed entire groups of strata, over districts of hundreds of square miles, so completely that their former existence is only known by means of a few small fragments which have escaped the denuding action. The most conspicuous instance of this action in recent geological times is the excavation of the gorge of the Niagara, cut to an average depth of 200 to 300 feet for a distance of 7 miles. The energetic action of the waves upon cliffs bordering the sea may be judged of by the fact that the average of the observed force of the waves at the Skerryvore lighthouse on the British coast was in summer 611 lbs. on a square foot, and in winter 2,026 lbs.; while the greatest force observed amounted to 6,087 lbs., or nearly 3 tons. On the E. coast of England this action has proceeded so far that some towns, which at the time of the Norman conquest were several miles inland, are now upon the sea shore; and the site of at least one important seaport of the 12th century is now several miles at sea. The quantity of water upon the globe is in due proportion to its importance, the waters of the oceans, lakes, and rivers covering 2¾ times as much of the earth's surface as is occupied by dry land; the exact proportion, so far as hitherto known, is 276 to 100 for the entire globe, 154 to 100 for the northern and 628 to 100 for the southern hemisphere.—The provision of an ample supply of good water, both for drinking and bathing purposes, has always been considered an object of the first importance; and some of the finest examples we still possess of the engineering and architectural skill of the Romans are their aqueducts and baths, which have seldom been equalled, and never surpassed, in modern times. Until 40 or 50 years ago, most modern European cities were not nearly so well supplied with this necessary of life as many ancient, or even as some modern oriental ones; but a great change has since taken place; the importance of a copious supply for the preservation of the health of large cities is fully recognized; and the Croton water works of New York, the Fairmount water works of Philadelphia, with those of Boston and Brooklyn, are among the improvements for this purpose in the United States. In countries in which water is scarce, immense tanks are constructed to preserve all the rain water that can be collected, and some of these in Hindostan cover very large spaces of ground. Very extensive engineering works in the forms of canals and aqueducts have also been undertaken in various countries, as in Tuscany and India, to obtain water for irrigation; and some of the aqueducts or "flumes" constructed in California to bring water to gold diggings, rank in extent at least among the first of their kind. The labors, on the other hand, undertaken to keep out the waters of the sea, or restrain rivers within their proper limits, have been even more gigantic; examples are seen in the dikes of Holland and of some parts of England, the levees extending for hundreds of miles along the Mississippi, and those of the Po; the last named of which requires to be continually raised, so that the river now runs along the top of an embankment far above the level of the surrounding country.—The quality of water supplied to towns is of equal importance with the quantity; and sufficient attention has not always been paid to this point, nor to the manner in which it is distributed for use. The dangers arising from the use of lead pipes, and the precautions which should be taken against them, are described under Lead. In the table of analyses will be found the composition of the water supplied to many of the principal cities both of Europe and America. The chief requisites are, that the water shall not contain too much mineral matter, which renders it "hard" and unfit for washing and cooking, nor too much organic matter, which by its decomposition renders it flat and disagreeable in taste, and very unwholesome. The hardness of most waters is diminished by boiling, so that some of them in this way become suitable for washing; and waters impregnated with organic impurities are in the same way often made far more pure, though by loss of their gases left even more flat and unpalatable than before. It is said that marsh waters may be in many instances so far improved as to fit them for drinking and culinary use, by previously steeping in them certain herbs, or by rubbing the inside of the kettles they are to be boiled in with bitter seeds or herbs. For this purpose the tea plant is employed by natives of China and Japan, the *strychnos potatorum* in parts of India, and the bitter almond on the banks of the Nile. So, where no better method presents itself, bad waters may often be rendered much more safely drinkable by first filtering them through fresh clean sand and clay, or sand and charcoal, or even by pouring them for some time from one vessel to another in the sun. Rain water collected in towns or in their immediate vicinity, since it passes through an atmosphere unusually loaded with soot and other foreign matters, requires in the way of fitting it for use more than the ordinary care. Thus, before being used it should be boiled and strained; or what is still better, it should be effectually filtered before admission to the cistern—the filtering materials, as in case of all highly impure waters, requiring frequent purification or renewal. The attempt is made to free the water of the Thames supplied to London, at least in certain parts, of the great amount of suspended matters, by filtering it through thick beds of sand and gravel. Rain water collected upon leaden or soldered metallic roofs will be certain to dissolve and hold in solution the dangerous salts of lead. In rare instances, the water supply of towns becomes deteriorated by the growth in it of immense numbers of microscopic animals and plants. Some years since the Cochituate water, supplied to Boston, suddenly acquired a very disagreeable fishy smell and taste; and this was found to arise from the presence in it of great numbers of animalcules, the decomposition of which set free an oil imparting the offensive qualities. The water supplied to the city of Amsterdam was found, in 1856, to assume a similar fish-like smell, and on standing to give a reddish deposit; but in this case the cause was determined to be the presence and decomposition of masses of algæ, confervæ, and other water plants. Mr. Medlock found that by allowing such waters to remain for some hours in contact with a considerable surface of iron, its organic impurities could be either destroyed or rendered insoluble; and Dr. Muspratt regards this means, combined with subsequent filtration, as the best yet discovered for purifying waters of the character referred to. In many manufacturing processes involving chemical principles, as for example those of dyeing and brewing, the quality of the water employed becomes of great importance. The celebrated Burton ale has never been successfully produced except in the original locality, Burton-on-Trent, England; and the fact is found to be due to the quality of the water there employed, among the constituents of which are calcareous salts in considerable amount.—The securing of an abundant supply of fresh water at sea is an object of great importance, but at the same time one very difficult of attainment. Fresh water stored in casks or tanks in the hold of a ship soon becomes very offensive; though the organic matters usually complete their decomposition within a month or two, and the water is subsequently of tolerably good quality. The water of the ocean so abounds in saline matters, that the drinking of it only increases instead of relieving thirst, and that it is wholly unfit for dietetic purposes. The importance of having at command means of obtaining fresh water from that of the sea has long been appreciated, and considerable progress is already made in this direction. Thus, a drinkable water is obtained from that of the ocean, either by subjecting it to great pressure and afterward filtering; or better by freezing, separating the ice carefully from the remaining saline liquor, and then thawing; or by any of the contrivances for boiling it and condensing the steam, in a word, for the distillation of it. Many British government ships are now supplied with the apparatus devised by Mr. Grant, in the use of which the cooking of food and the purifying of water for drinking go on at the same time—a portion of the heat being applied to vessels containing sea water, and distilling it. Other arrangements for distilling sea water are also in use; and so far as quantity is concerned, any of these give very satisfactory results. But usually the distilled water, even though afterward impregnated with air, has a disagreeable taste and odor. These Dr. Normandy has traced to the presence of organic matter, which becomes charred during distillation, certain of its products passing over with the water. By filtration through charcoal, he removed the offensive qualities; and he further improved the water for drinking by subsequently impregnating it, not with air, but with the gases which it had contained before distillation. For these and certain economical reasons, his apparatus has proved very valuable, and it is employed upon many vessels intended for long voyages. For certain chemical modes of softening hard waters, or purifying them from matters in suspension, see FILTER; and further in reference to the use of water for culinary purposes, see ALIMENT.—Water fulfils an important part in the ceremonial observances of most religions. In almost all, it is employed as a means of purification before the offering of sacrifices, or entering upon any solemn act of religious service. The Moslem is required by his religion to wash 7 times a day. Among Christian sects, water forms, in the rite of baptism, the medium of initiation into the church; in the Roman Catholic church especially it is, after being blessed, employed under the name of "holy water" in many ceremonies.—In medicine, water is, apart from incidental uses, itself a remedy of great importance. (See BATH, and HYDROPATHY.) Taken internally, it acts directly by temperature and bulk, and secondarily, through its absorption and subsequent excretion, to cool, dilute, and purify the blood. In the stomach, between the temperatures of 60° and 100°, it produces relaxation, and if freely taken at nearly or somewhat above the latter temperature, it nauseates or causes vomiting. By its bulk and solvent powers, water dilutes the contents of the stomach and bowels, when these are acrid, favoring their expulsion, and allaying irritation of the organs. Through absorption, it promotes secretion of urine and cutaneous transpiration, to both of which it is so necessary that, as declared by Dr. Bache, few diuretics or sudorifics produce their desired effects unless assisted by copious dilution. Cold water is frequently applied externally, usually by means of cloths changed as required, for reducing local inflammations, and as a means of checking hæmorrhages. In inflammations of organs within the chest, however, its external application is likely to prove injurious, by increasing congestion. In certain states of the system, and in the season of summer generally, the eligibility of the succulent fruits for food arises largely from the circumstance that their plentiful juices are equivalent to an acidulated and sweetened, but otherwise highly pure water.—Among the speculations relative to the probability of the final extinction of life on our planet, one of the most recent is that of L. Sämann, a translation of parts of whose article on the subject appeared in the "American Journal of Science" for 1861. According to the view of this writer, under the continued cooling of the globe, the water and even the atmosphere now upon and above its surface can gradually be absorbed into the immense masses of porous strata that must finally exist, so that the earth shall become (so far as its surface is concerned) a globe without atmosphere or water, thus reaching (apparently for reasons given) only so much later the condition at which, so far as our senses have detected, the moon attending our earth had long since arrived. The results thus supposed are based upon an assumed shrinking of the materials of the earth inside of its present crust, during complete cooling; and, comparing the volumes of the strata, water and air, a very slight actual shrinking, say for the atmosphere $\frac{1}{250}$ part, is declared sufficient, while a porosity equal to that already existing in known rocks would more than suffice for receiving the entire volume of existing waters.

WATER, HOLY. See HOLY WATER.

WATER BUG, the popular name of the hemipterous insects of the sub-order *heteroptera*, and families *notonectida* and *neparia;* in this sub-order the anterior portion of the first pair of wings is of a horny consistence. The antennæ are very small, of 3 or 4 short joints, and concealed beneath the eyes. In the *notonectida* the head is rounded, and as wide as the thorax; the common boat flies of America and Europe (*notonecta Americana*, Fabr., and *glauca*, Linn.) swim very rapidly by means of the flattened, oar-like hind legs, and with the back downward; the air for respiration is carried in the space between the wings and back; they are active and predaceous, feeding on aquatic insects and larvæ, and may be seen in almost any piece of fresh water; the color is grayish brown, and the length about $\frac{3}{4}$ of an inch; they are carnivorous at all ages, and are able to nip the finger pretty severely. In the other family the head is small and triangular, and the legs not so well adapted for swimming, the anterior pair being modified into powerful prehensile organs. The genus *nepa* (Linn.), or water scorpion, includes some insects 2 or 3 inches long; the common species, *N. apiculata* (Harris) of America, and the *N. cinerea* (Linn.) of Europe, are about $\frac{2}{3}$ of an inch long, and of a brownish gray color; respiration is effected through 2 long filaments extending from the caudal extremity; they are voracious and carnivorous, and fly chiefly at night.—The *hydrocanthari* or water beetles have been described under BEETLE (vol. iii. p. 72); they embrace the genera *dyticus* or *dytiscus* (Geoffr.), carnivorous in all their stages, and *gyrinus* (Linn.), the well known brilliant whirligigs whose rapid movements baffle the attempts of the schoolboy to catch them as a sure indication of good luck; some of the larvæ, 2 or 3 inches long when full-grown, are called shrimps, and attack successfully even small fishes.

WATER-COLOR PAINTING. In nearly all the methods of painting known to the ancients, water was employed as the vehicle, either alone, or mixed with some glutinous substance serving to bind together the colors. Paintings in distemper, frescoes, and miniatures are all varieties of water-color paintings. The term, however, is now applied almost exclusively to painting on paper with colors diluted with water, a process of comparatively recent introduction. The best Italian, Dutch, and Flemish painters, indeed, often executed their cartoons and finished sketches with water colors; but these were mere studies, and pictures in water colors on paper, intended for exhibition as completed works of art, are much more modern. They were at first executed exclusively with solid opaque colors, and the use of transparent colors first became general toward the end of the last century. The name of "stained drawings" was at first given to paintings in this latter style; and the drawing was in general made out in light and shadow with India ink or some neutral tint, and washes of transparent colors were then applied to the different parts. The plan now generally pursued is to paint in every object at once in its proper colors, without the use of a preparatory monotinted ground, trusting to subsequent modifications, commonly made with transparent, though sometimes with opaque colors, to remove the first crude effects. The superior facility of painting in this manner, as well as of rapidly sketching evanescent atmospheric appearances, has greatly tended to popularize the art; and the number of water-color painters is now very large, especially in England, the United States, and France, while in Great Britain there are special "societies of painters in water colors."—The practical details of the art vary so much with different artists, that scarcely any general rules can be laid down. Some prefer a paper with a fine grain, and others with an exceedingly rough one; and the variation is equally great in the degree of absorbent power which is thought to be best adapted to each artist's style. If the surface of the paper is at all greasy, so that the colors do not adhere well, it should be sponged over, or the colors may be mixed with water to which a little ox gall has been added. A peculiar texture is sometimes imparted to parts of the paper by rubbing, sponging, &c., and some of the finest landscape effects are thus produced. The colors employed, except gamboge and sap colors, do not differ from those used in oil painting (see PAINTS), and are either made into hard cakes with gum, or used "moist," or prepared with honey or some saccharine material. Moist colors are generally also made into cakes, though they are sometimes brought to a semi-fluid consistence, and enclosed in thin leaden tubes, from which they may be squeezed out in small quantities as needed; but this plan is not advisable from the liability of the color to dry up so much as to render it impossible to press it out. The colors chiefly used are ultramarine, indigo, Antwerp and cobalt blues, gamboge, ochre, Indian and chrome yellows, Indian red, vermilion, lake, carmine, burnt ochre, and brown pink reds. Out of these primary colors all the others may be compounded; but sap green and several browns, as raw and burnt sienna, Vandyke brown, umber, sepia, &c., may also be used with advantage. They are generally mixed with water alone, but gum and other substances are sometimes added to the water, in order to give depth to the shadows and brilliancy to the lights.

WATER CRESS (*nasturtium officinale*, R. Brown), a salad plant of the natural order *cruciferæ*, found growing spontaneously in ditches and small clear streams. Its roots are perennial, the long white fibres striking into the mud or gravel; several stems rise from the same crown, and grow to the height of 18 inches; they are hollow, channelled, leafy, dividing at the top into 2 or 3 branches; leaves pinnate, with 5 or 6 pairs of leaflets and a terminal odd one; pinnæ roundish, almost heart-shaped, and standing nearly in an alternate position along the midrib; flowers in loose spikes at the end of the branches, small and white; pods (siliques) short, tapering, and full of small brown seeds. This species can be transplanted into any small rill, or grown in tanks and tubs partially filled with soil and supplied with fresh water, and flourishes through the whole year in forcing houses. It is considered a wholesome and pleasant salad.—The American water cresses are species of *cardamine*, one of which, *C. rotundifolia*, found in cool, shaded springs, has leaves and stems which taste like the European species, and like it affords a very agreeable salad. A moist and rich garden soil seems suited to it in cultivation.

WATER LILY (*nymphæa*), a genus of floating aquatic plants of the natural order *nymphæaceæ*, comprising herbs with peltate or cordate fleshy leaves, 1-flowered peduncles bearing solitary white or yellow flowers, succeeded by a many-celled, indehiscent, many-seeded fruit. The exact position which this order sustains in the natural arrangement has been a topic of much dispute, some botanists averring that the water lilies are endogens, and others that they are exogens. The matter has been fully treated in A. P. de Candolle's *Mémoire sur les affinités de la famille des nymphéacées* (Geneva, 1821). The several species inhabit the whole northern hemisphere, and are rarely seen in the southern. In the United States the most common is the sweet-scented water lily or pond lily (*nymphæa odorata*, Aiton), found in great abundance in muddy ponds and peat ditches of New England, and extending through the southern states. Its rootstocks are large, thick, and knotted, deeply imbedding themselves in the mud, and throwing up numerous long perforated stems, supporting rounded, kidney-shaped, cordate-cleft leaves, with entire margins, of a bright green color above and purplish beneath, much veined on the lower surface; the flower stalk (scape) is also long and perforated, supporting a large, pure white flower, consisting of 4 lanceolate sepals, green outside and white within; the petals numerous, lance-shaped, delicately and purely white; the stamens numerous in several rows, the filaments of the outer ones broadly dilated like petals, the anthers adnate, opening inward; stigmas radiate, forming a crown to the ovary; fruit depressed globular, seeds enveloped in a sac-like aril. There are several varieties occurring in different situations, distinguished by the sinus and lobes of the leaf being more or less acute, by the lobes being rounded, or by the much smaller size of the entire plant and by its flowers being of a beautiful rose color. The flowers expand in the morning and close at night, throwing out a delicious perfume. This species is capable of cultivation, and greatly increases in bulk and proportion of all its parts when artificially treated in shallow pools or in tanks. The white water lily (*N. alba*, Linn.) is found in clear ponds and shallow slow streams of Europe; its root is horizontal, throwing out many stout radicles; its leaves are oval, heart-shaped, 4 inches wide, and with nearly parallel or close lobes at base, entire and smooth, floating; its flowers 4 or 5 inches wide, the petals white, the stamens and pistil yellow; the scent very faint. The species is said by Nuttall to occur also near Detroit, Mich.; but we have known the American pond lily to be scentless when growing in very cold springs of water. The water lotus (*N. lotus*, Linn.) resembles the white water lily in foliage and flower, but its leaves are much toothed on their edges; it abounds in the plains of Lower Egypt in inundated localities. The red water lily (*N. rubra*, Bot. Mag.) has finely toothed peltate leaves and showy red or rose-colored flowers, and is a native of the East Indies. The blue water lily (*N. cœrulea*) is a native of the Cape of Good Hope, with smaller, nearly entire, peltate leaves, 2-lobed at base, and exquisitely beautiful, blue, highly scented flowers.—The yellow water lily (*nuphar luteum*, Smith) has cordate oval leaves with approximate lobes, triquetrous petioles, and large yellow flowers; it is a European species, blooming from June to August. The American yellow water lily or spatterdock (*N. advena*, Aiton) has a wide distribution from Canada southward, and from Arkansas to Oregon. It is a showy aquatic, its leaves very broad and oblong heart-shaped with rounded lobes, smooth and dark green above and supported on semi-cylindrical petioles; flowers with 6 very unequal sepals; the petals numerous, narrowly oblong, thick, fleshy, truncate, resembling the stamens, but shorter; the stamens numerous, with the anthers longer than the filaments; stigmas 12 to 24 rayed. The species is extremely common in ponds, its leaves floating where the water is deep, and being erect where it is shallow. The lesser yellow water lily (*N. Kalmiana*, Pursh) is a more delicate and graceful plant, with smaller and rounded floating leaves, on slender, almost filiform petioles, the flowers about an inch broad of 5 sepals, the petals spatulate, as long as the stamens; the anthers shorter than the filaments; the stigma 8 to 14 rayed. The arrow-leafed water lily (*N. sagittæfolia*, Ph.) has large, thin, floating, smooth, sagittate, oblong leaves on slender petioles, the lobes at base expanding; the flower with 6 sepals, the outer green, the inner petaloid, narrowed at base. This species is southern, being found only in still waters from North Carolina to Georgia.—The *euryale ferox* is a noble aquatic water lily of the East Indies, having very large peltate orbicular leaves, and bluish purple or violet flowers of small size; the footstalks of the leaves and the divisions of the calyces are hispid with stiff prickles. But fine as this is, it is entirely surpassed by the great water lily of South America (*Victoria regia*, Lindley), first discovered about 60 years ago by Hänke in Central America; afterward seen by Bonpland in 1820 near the forks of the rivers Parana and Paraguay; then in 1828 by D'Orbigny, who gathered and sent specimens to Paris; then by Pöppig while he resided in Peru from 1827 to 1832, and who considered it a species of *euryale;* then 5 years afterward by Schomburgk, who noticed it in British Guiana; it was again seen by several travellers in South America, and in 1849 Spruce, who went in search of it, found it growing near Para, and had it successfully introduced into England. Subsequently its seeds were sent to the United States, where in several instances it has flowered in great perfection. The root of this magnificent plant is a spindle-shaped tuber, and on the appearance of every new leaf a bundle of fibrous rootlets strike out. The crown of the root is invested with a series of large scales, which become more apparent as the plant grows; the leaves are nearly circular, scarcely cleft at the sinus, notched slightly at the apex. In the adult leaves the margins are turned up to the width of 2 to 4 inches, the upper surface of a pleasant green and the lower of a rich dark crimson. From the base of the leaf 8 large veins radiate to the very margin; these are crossed and tied by transverse arching veinlets, and spiny with strong prickles; the petiole is also prickly without and porous within, being perforated by several longitudinal canals. A full-grown leaf will measure 4 to 6 feet across; its tissue is very tender and delicate, and would easily break were it not for the singular provision of its veins. The flower bud measures from 6 to 9 inches from base to tip; each bud as it appears is accompanied by a young leaf; the divisions of the calyx (sepals) are 4, of a deep purple color, which fades to white at the edges; externally they are extremely spiny. The petals are 50 to 60 in number, in 3 distinct sets, each smaller toward the stamens, the outer pure white, 6 to 7 inches long, of the most delicate tissue and of lace-like appearance. The stamens are distinct, and form a corona on the central disk (torus), the outer ones abortive and thick, the inner perfect, with broadly subulate rigid filaments; the ovary hemispherical, many-celled; the fruit a large, globose, urceolate berry, spiny without and containing several greenish black seeds, each of the size of a pea, with a hard and smooth coat, but filled with copious farina; the embryo is small and white, and enclosed in a membranous sac; the cotyledons hemispherical, thick and fleshy, and the radicle short and superior.—The qualities of the *nymphœaceœ* are reputed to be sedative and narcotic, but these are still doubtful. Their stems are bitter and astringent, and have been prescribed in dysentery; they are likewise farinaceous, and after repeated washings may be used for food. The seeds are esculent, and are sought for by the wild people of countries in which they grow. The large seeds of the *Victoria*, on account of their abundant farina, are called water maize. The large rootstocks of species of *nymphœa* are roasted and eaten by the negroes of Senegal, and according to Fée the rhizomas of *N. alba* are better than oak galls in producing a gray dye; they are also used in tanning leather. The leaves of *nuphar luteum* are said to be styptic.

WATER OATS. See Rice, Indian.

WATER RAM. See Hydraulic Ram.

WATER SHIELD, a small but pretty aquatic plant of the natural order *cabombaceœ*, embracing two genera found in the United States. The common water shield (*brasenia peltata*, Pursh) has a creeping rootstock, alternate, long-petioled, centrally peltate, oval, floating leaves, of a smooth and shining upper surface, the lower side being of a rich purple, and the whole plant invested with a thick, transparent, and insipid mucilage; the flowers are dark purple of 6 petals, the outermost shortest, stamens numerous, germ oblong with incurved styles. The plant is found in clear ponds, and extends throughout the United States, and is also indigenous to Australia and the East Indies. The *cabomba Caroliniana* of Gray is typical of the order, and is southern in its habits, extending as far as Florida. Its leaves are oblong linear, the submerged ones opposite, divided into numerous filiform flattened segments, the floating peltate, entire; the flower small in the axils of the floating leaves, white, and yellow at base. The medical qualities of the order are astringent, and the leaves of *brasenia* are employed in phthisis and dysentery.—The term water shield has been likewise used to designate a new genus of submerged lichenose plants of the order of *collemaceæ.* The veiny water shield (*hydrothyria venosa*, Russell) grows on the rocky beds of mountain streams in New England, and is remarkable for its fine aromatic scent. Its leaf-like stems (thallus) are thin, the epidermis composed of intricately cellular tissue, the medullary portion of minute irregular granules imbedded in copious mucilage. Upon the surface are numerous strongly prominent veins, the central parts of which consist of anastomosing fibres, and the whole enclosed by thickened and quadrangular cells. The plant fixes itself by spongy tufts of confusedly packed fibres; it is of a rich brown when moistened, but turns to an ashen gray when dry. The fruit (apothecia) is borne on the edges of the thallus, at first disk-like with a thalline exciple, but becoming convex; the seeds (spores), 8 in each ascus, are transversely divided into 3 or 4 partitions; their color is dark fulvous. The veiny water shield has as yet been found in a single species only.

WATER SPOUT, a column apparently of cloud or water, appearing in certain cases between a dense cloud above and the surface of the sea or land below, and reaching through a part or the whole of the intervening distance. Its general form approaches more or less nearly to that of a cone, or of a double cone, the least diameter in the latter case being near the middle of its height, and parts or the whole extent of it can be seen, even at considerable distance, to have a rapid horizontal rotation. This whirling movement of the spout or column is universal; and the fact shows that the phenomenon is in all cases associated with or dependent upon some form of whirling wind. (See WHIRLWIND.) By many French writers the name *trombe* is given both to whirlwinds and water spouts, the latter being distinguished as *trombes de mer.* When water spouts occur at sea, they may begin to form at the surface of the water, rising gradually in height, and meeting an upper portion that nearly at the same time begins to descend from the base of a cloud above. But more generally over the sea, and always over land, they first make their appearance at the under surface of a cloud, from which a pouch-like appendage may be observed to protrude, enlarging and lengthening into a conical or funnel form, the base always above. If this occur over the sea, it may or may not be attended with formation of the corresponding or lower portion; though when both parts appear, they almost always extend until they meet, and the column is complete from the cloud to the sea. The upper cone of the spout may appear at the under surface of the storm cloud accompanying a tornado on land; or even beneath any dense cloud, where the conditions favor its production. The duration of the phenomenon in any case may be very brief, not exceeding a few seconds; or it may continue during a quarter or half hour, or more, in such cases often advancing with the cloud or storm. In all cases, over the land, the upper cone can alone make its appearance, there being no ascending column of sufficiently dense vapor or water to complete it from below; but the former has been in many instances observed to extend down quite to the surface of the earth. The generally rotative character of the "dust storms" of parts of Asia and Africa, and observed also in the interior of South America, and the appearances characterizing the columns of sand that are frequently raised from and swept along the surfaces of sandy plains or deserts, show that in the manner of their origin these are essentially identical with water spouts; the substance of the column, whether of dust or of vapor, being accidental, and determined by the circumstances of the place. A further sameness in the two classes of phenomena is found in the fact that in either a single column may appear, or not uncommonly two or several such, partial or complete, may exist side by side at no great distances, showing the occurrence of so many separately produced whirls or vortical movements of near bodies of air.—When the lower portion of a proper water spout begins to form, whether before or after the commencement of the upper, the sea at the place of the lower base, and over an area of perhaps 120 yards diameter, is observed to be greatly agitated, the waves tending rapidly toward the centre of this area with a leaping or boiling motion, and a large body of vapor and spray, with perhaps much water in larger drops, rising quickly in a sort of trumpet form, and usually, as already stated, to meet the descending portion from clouds above. All the parts have a rapid revolving or spiral movement, in which the waves below may also participate. When the two portions have united, the diameter at and near their junction may not exceed a very few feet. Some observers report that the formation of water spouts is accompanied with a rumbling noise; but at least in many instances this does not appear to be noticeable. As complete and observed under favorable circumstances, the column always appears darkest along its margins, which however are seldom perfectly defined, while it is lighter or faintly blue along its middle line; these appearances evidently indicate that it is in a degree hollow, or at least, as would be expected, that the larger portion of the spray or water is carried by centrifugal action toward the circumference of the whirl. The facts that on land or sea such columns are usually best observed against cloud, and that in parts where they would be viewed by transmitted light from clear sky beyond them, they often become quite invisible, as if such portions were cut out, certainly appear to favor the opinion of some, that, whether descending from cloud or rising from the sea, the water spout is mainly composed of water in the ordinary or liquid condition. Abundant facts prove that very heavy objects can be elevated into the air, and sustained for a considerable time before they are allowed to fall; though we are as yet unable to understand exactly in what manner so great a lifting power is exerted on those objects. It is, however, in no way unreasonable to admit that, when the spout is formed at the surface of the sea, the same agency, whatever it be, can carry up to great heights in the air considerable quantities of water, in the form of large drops or of masses torn from the crests of the waves; and it is known that such water spouts scatter or throw out about them much water, and from parts far up the column. The whirling motion of the column, and the tendency to a vacuum within, have quite naturally led to a supposition that the water in these cases is elevated by what is called suction, *i. e.*, by surrounding atmospheric pressure; but as this cause could in no case prove effective to more than 33 feet in height, it can do no more than aid or favor the ascent at the start, and is wholly inadequate to account for the entire elevation that unquestionably takes place. The column or columns, as the case may be, when formed, are usually observed to move with the wind; and when several exist at the same time, and, rising vertical, inclined, or tortuous to great heights, move slowly over the sea, they present a very grand spectacle. Even when no wind is felt by the observer, the spouts may shift their position, and sometimes successively in different directions; or, the upper and lower parts moving different ways, or at different rates, the column becomes inclined or bent, and finally parts, sometimes, it is said, with a loud report. Usually, the column disappears at the last as if its substance were drawn up or absorbed into the clouds overhead; or else, quite as commonly, it terminates in a heavy fall of rain, and sometimes in that descent of water in an almost continuous or solid mass, which on land at once deluges the narrow locality receiving it, and is popularly expressed by saying that "the clouds burst" or "break." Disappearing without rain, the spout may soon reappear, and in some instances several times in succession. The notion prevailing among seamen, that the whirl may be broken and the column dispersed by firing a cannon shot through it, is not positively known to be founded in fact. During the elevation of the temporary island of Sabrina from the bed of the ocean, near St. Michael's, in the Azores, June 9–12, 1811, the projected vapor condensed above into immense clouds, through which stones and lava were thrown from the newly formed crater, and beneath which, as they moved slowly away in a horizontal bank at a given altitude, a number of water spouts formed, not fewer than 300, as reported ("Philosophical Transactions," 1812), and full 800 feet in height.—It is probable that the light tapering cones, often inclined or twisted and several in number, that are in certain instances seen depending from elevated clouds, and from which no rain reaches the earth, are sometimes the upper portions of true water spouts, which finally disappear in the cloud or air. Sir J. Herschel, observing some of these through a telescope, found the lighter medial line and generally defined margins characteristic of these bodies. But in many cases the appearance of more diffused dark lines depending from clouds, and not reaching the earth, is doubtless produced by rain or snow actually falling through a part of the distance, but reabsorbed into vapor in the air before completing its descent.—Some of the most remarkable water spouts, or at least those most satisfactorily described, are such as have appeared over the land. Such a one appearing as a large conical mass of vapor, from which great quantities of water were thrown off, attended with vivid lightning and a strong electrical odor, is described in the 5th number of Brewster's "Journal of Science," as seen in France; it moved directly forward over high grounds, valleys, and a river, but turned around hills still higher that were in its path. In 1718 a water spout is said to have burst in Lancashire, England ("Philosophical Transactions," No. 363), which for the distance of a mile tore up the ground to a depth of 7 feet, so as to lay bare the underlying rock. Major Sherwill describes a remarkable exhibition of water spouts observed by him at Dumdum, 8 miles N. E. of Calcutta, Oct. 7, 1859, on the occasion of the setting in of the N. E. monsoon, which came in conflict with the existing S. W. moonsoon, and had for some days previously disturbed the dense cloud bank lying along the southern slope of the Himalaya, and given a varying movement to the heavy clouds covering nearly the whole sky. During the day named, several water spouts had partially formed and vanished. At 3 P. M. the wind lulled, and soon after from the horizontal base of a heavy cumulus, the height of which was found by trigonometrical measurement to be 1,500 feet, while the cloud itself was 3,000 feet long and 5,000 feet in depth from base to summit, a bulging or protruding portion was observed, from which a broad, pale column like an attenuated cone suddenly descended, its lower part being seen to gyrate rapidly, and also apparently as it neared the ground to oscillate quickly from right to left; still lower, this column parted into two more slender ones; and as soon as it had reached the ground, the appearance of the whole instantly changed, the column becoming now a heavy mass of water, through which within a few seconds almost the whole cloud above, rushing inward from its sides, poured in rain to the earth. The duration of the spout previous to the so called bursting of the cloud was about 25 seconds; and the water covered a grassy plane to the extent of half a square mile and the depth of about 6 inches, requiring 14 days afterward to drain off. As the torrent came down, cattle fled in all directions; but no noise reached the observers, nor was there any lightning. Half an hour later, a spout descended some 900 feet from a cloud 2,000 feet above the earth; this lasted about half an hour, and disappeared upward into the cloud. Of several water spouts witnessed on other occasions by the same and other observers near Calcutta, some were, while others were not, accompanied with lightning, and a part only ended in rain. On another occasion Mr. Sherwill observed a massive cloud to throw down some 20 water spouts, each about 1,000 feet in length, which, as it moved toward the mountain Ponglo, seemed to reach forward and upward, as if attracted to the summit of the mountain; the cloud appeared to be electrically charged, and when the spouts reached the mountain it burst into rain. It is still very doubtful, however, whether the electrical excitement often attending upon water spouts is more than the consequence of the exceedingly great friction of portions of air and water intermingled, which, in such a body as the watery column and when rotated so rapidly, must occur both in the higher parts, and, if it reaches the latter, at the surface of sea or land. Thus, the real and primary cause of all essential parts of these phenomena is without doubt the whirling movement set up by some means in the air; though in what way this is competent to produce some of the results is not yet known, and the subject evidently requires further examination.—The whirling winds which elevate and carry along columns of sand or dust may be such as produce at a given place but one of these, or several side by side, or occurring irregularly. In the latter cases a large tract of air appears to be first rarefied, which, if it gave rise to a consentaneous or single movement, would produce a real cyclone; but this body being broken up by inequalities of ground, or of heating, owing to other causes, several distinct eddies or whirls result, each of which may carry up its own column; the result being thus like the division of a common mass of flame, as it ascends, into distinct spires. Sometimes the columns so arising continue and advance quite distinct, though near together; at others their form is more confused, or they spread out into vast clouds above, which are whirled along, or afterward borne by direct winds, and it may be to great distances. Burckhardt observes that in Africa and the East such clouds of dust often obscure the sun, imparting to the atmosphere a reddish, yellow, or leaden hue. Such clouds are often carried at great heights beyond the western coast of Africa, filling the air or covering the decks of ships at considerable distances to sea; and Prof. Piazzi Smyth, during his astronomical observations made upon the peak of Teneriffe, and at a height of 10,700 feet, found the air often rendered hazy by clouds of dust, dense enough at times to obscure the sun, sometimes appearing as several strata at different elevations, and of which the origin must have been such as that now referred to. It is probable that, where they arise, the ordinary terrors and dangers of these dust columns or storms have been exaggerated; yet they are known in time actually to extend the area of deserts, and in certain instances to prove very destructive of property and life; an example being that of the loss suffered by the army of Cambyses in his expedition into the Lybian desert. Sir J. Herschel suggests that as the desert sands may become heated to a very high temperature, sometimes to 200° F., the heat from these sands when carried into the air may be sufficient to cause the fatal effects alleged to occur; and of course it cannot be supposed that the air acquires any actually poisonous quality. The dust storms of India are said sometimes to remain stationary for a long time; at others to advance so rapidly, that within a few minutes after their first appearance as a low bank of clouds along the horizon, they reach the observer's place, filling the air with dust, and rendering flight into houses or other shelter necessary to comfort or safety. This wall of dust, Mr. Baddeley says, when approaching, may be seen to be composed of several vertical bodies side by side, the rotation of which continues upward as far as the eye can reach; while the air is generally highly charged with electricity, and the storm of dust almost invariably terminates in a fall of rain. Finally, among the bodies that have been carried by such winds from the sea or land into the air, and thrown down at places more or less remote, are fish, frogs, confervæ and other plants, infusoria, ashes, and at times substances of which the source and nature have been quite unaccountable.

WATER WHEEL, the designation of a variety of forms of wheel intended to receive and to impart to connected machinery the moving force due to the weight or momentum of water, or to both these combined. Such wheels may be divided into two general sorts, according as they have horizontal or vertical axes. The latter, most of which are also reaction wheels, are considered under TURBINE. The former class, or those with horizontal axes, include the earliest known forms of water wheel; and they are generally the simpler in construction. The possibility of applying to use the moving power of streams, rivers, and waterfalls, must very early have occurred to any people who had advanced to some extent in practical and constructive arts. If the natural current of a stream be employed, it readily appears that, supposing the conditions of depth and friction along the bed to correspond, the moving force in any case will be as the product of the volume of water that would in a given time strike and act on the float boards of a wheel, into the amount of fall, or the descent of the stream within a given distance. Owing, however, to the irregularities in the volume and velocity of streams at different seasons, and the loss of momentum by friction against their beds, it becomes desirable to accumulate and retain a certain supply or head of water, and to develop the impelling force of this, due to volume and gravity, at a fixed position. These results are secured by constructing a weir or dam across the stream, and allowing the water collecting in a pond above this to escape at a certain height through a flume upon the wheel; or more commonly, determining its escape when desired, either at the bottom of the dam or at some height in it, by the raising of a flood-gate. In theory, with a pond of water filled to a given depth, and from which the same volume is allowed to flow within the same time, the moving force will be precisely the same, whether the water fall from the top of the dam upon the wheel, or issue at midway or at the bottom of the pond; since the moving force imparted by gravity during the accelerated fall is equal to that impressed at corresponding depths on the standing water. (See HYDRO-MECHANICS.) In practice, however, the resistance of the air, of the sides and bed of the passages, and that due to eddies, introduce differences in the results in the different cases.—Horizontal water wheels are of 4 principal sorts: undershot, overshot, and breast wheels, and suspended or tide wheels. The undershot wheel is set directly in a running stream, or it is placed close to a fall or a dam; in the last instance, the water is admitted to its lower side by a gate from the bottom of the pond. It is simply a large and strong wheel having stays projecting from its rim, upon which stout planks, called floats, and also palettes, extend along its length. The current or issuing water strikes these palettes, and imparts movement to the wheel. Where the water issues below from a pond, it is found that the thickness of the fluid sheet should not exceed .82 ft., nor be less than .492 ft.; and the height or width of the floats should be about 2.13 ft. The diameter of the wheel should be between 13 and 26 ft., and the distance between two floats about equal to the width of one of them. The dynamical effect is not proportionate to the diameter of the wheel, but, under the condition further to be named, to the number of rotations in a given time, *i. e.*, the velocity of the wheel. By regulating the work or resistance which the mechanism moved by the wheel must act against, the wheel itself can be confined very nearly to any desired actual velocity. Now, if its velocity were equal to that of the stream, it would simply move with the latter, and could not receive or transmit any added impulsion from the water.; if, on the other hand, the wheel or machinery were so loaded that the former could not move, the resistance would equal the power; and in either case no useful work would be done. Between these extremes there must be some velocity at which the useful work shall be a maximum; and this is found to be that in which the velocity of the floats is about one half, or more strictly .45, of that of the stream. Owing to friction, irregular flow of the issuing body of water, and the impossibility of consuming on the floats its entire moving force, the performance of common undershot wheels is low, never exceeding from 25 to 33 per cent. of the power in the acting body of water. In Poncelet's wheel, however, with curved floats, into which the issuing body of water rises with more uniform movement, until its velocity is nearly or quite consumed, and from which it also escapes with less of back pressure and irregularity, the floats being in number about double those of the common form, a larger utilization of the power of the water, rising to 50 or 60 per cent., is secured.—Of overshot wheels, the summit is placed at or a little below the upper level of the water; and the flow upon the rim of the wheel can be regulated by a flood-gate. The water is received into cavities formed by stout planks extending between the two ends of the wheel, and placed at an angle or curved toward the stream; these are buckets proper, and the wheels are sometimes called bucket wheels. Borda showed that the maximum effect with overshot wheels is secured when the diameter equals the height of fall; but, other things being equal, the useful effect is greater the slower the revolution allowed; since, in such case, the water can enter the buckets more regularly, it is not flung from them by centrifugal force, and its velocity and impulsion are almost wholly consumed upon the wheel before it is released. The velocity usually allowed is from 3 to 6 ft. per second, the wheel having gearing about it at one end, and transmitting a higher speed to a wheel and shaft connecting with the machinery. These wheels are usually applicable to falls of 10 to 50 ft. The number of buckets does not increase in the same ratio with the diameter; a wheel of 10 ft. having about 24 buckets; one of 20 ft., 56; one of 40 ft., 108. Under the best conditions, this wheel utilizes .75 of the moving power of the water.—The breast wheel resembles in form and construction the undershot, but has its floats closer together, and usually inclined toward the stream. It is set so that about one quadrant of it is turning close to a curved channel corresponding to its form, down which the supply of water (regulated by a gate) descends; and it is therefore impelled both by the weight and momentum of the water. As it is thus intermediate in its action between the undershot and overshot wheels, so it is also in its value. Being less loaded with the weight of water than the overshot, it moves with less strain and friction on its bearings, and under the best circumstances affords about .65 of the moving power. While the diameter of breast wheels, according to Morin, should be confined between 16 and 23 ft., Lambert's reports to the Berlin academy of sciences showed moreover the best results when the fall is between 4 and 10 ft. These wheels are distinguished, according as they receive the water above or below the horizontal diameter, into high and low breast wheels.—A suspended wheel is one deriving its moving power from the current of a river, in which it is set. Such a wheel, for temporary purposes, is sometimes set like a paddle wheel at the side of a boat moored in the stream, or two wheels, one on each side of the boat, with a shaft reaching to the mechanism on the shore. Such wheels are usually very simple and cheap; the power they afford is greatest when their rate of motion is about .40 of that of the stream. The diameter never exceeds 16 ft., the floats being 12 to 24 in number. When a wheel of this sort is set in a stream affected by the tides, it is called a tide wheel; and it then requires the application of some contrivance for reversing its effect on the mechanism, so as to secure movement of the latter in the same direction, while the wheel is driven in alternate directions by the ebb and flow of the tide.—At the Burden nail works, Troy, N. Y., the overshot wheel furnishing the power required is 50 ft. in diameter, and 22 ft. in breadth. The largest water wheel in the world is probably one employed in connection with the working of a lead and silver mine in the Isle of Man. This is an overshot wheel, 72 ft. 6 inches in diameter, 6 ft. in breadth, with a crank stroke of 10 ft.; it is estimated to give 200 horse power, and pumps 250 gallons of water per minute 400 yards high.—For more minute information upon water wheels, the reader is referred to the practical treatises on hydraulic machinery, and to Morin's *Expériences sur les roues hydrauliques*, &c. (*Comptes rendus*, Paris, 1835-'9).

WATER WORKS. See Aqueduct.

WATERBURY, a township and city of New Haven co., Conn., 33 m. S. W. from Hartford, with which it is connected by the Hartford, Providence, and Fishkill railroad, and 32 m. N. N. E. from Bridgeport by the Naugatuck railroad; pop. in 1860, 10,004. The city is situated on the left bank of the Naugatuck river, at the confluence of Great brook and Mad river with it. Its streets are generally well graded, with paved sidewalks, and supplied with gas and water pipes. Near the centre of the city is a fine public park; and on the W. side of the Naugatuck, opposite the city, is Riverside cemetery, containing 34 acres. There are 7 churches (1 Baptist, 1 Episcopal, 2 Congregational, 1 German Lutheran, 1 Methodist, and 1 Roman Catholic), and 2 banks with an aggregate capital of $914,000. The public schools are free and well managed; the number of children in attendance is about 1,800, and in 1861 over $14,000 was appropriated for their support. The city has 30 large manufacturing establishments, the principal articles made being rolled copper, brass, and German silver, and a great variety of articles made from these materials, among which are pins, hooks and eyes, buttons, lamps, clocks, daguerreotype mountings, butts, buckles, percussion caps, brass kettles, and plated ware. The capital employed in manufacturing is about $3,000,000, and the annual product $5,000,000. About 2,800 operatives, mostly males, are employed, and $60,000 wages paid monthly. Waterbury is known throughout the country as the head-quarters of the brass business. It was first introduced here by young mechanics, who, not being then capitalists, commenced on a small scale.—The town was first settled in 1667, and called Mattatuck till 1686. It was incorporated as a city in 1853.

WATEREE, a river of South Carolina, formed by the junction of the Catawba river and Fishing creek, the former rising in North Carolina, and the latter in York district, S. C. The two streams unite in the S. E. part of Chester district, and the Wateree takes first a S. E. and then a S. course, and unites with the Congaree in the S. E. extremity of Richland district, the two forming the Santee. Steamboats ascend the Wateree as far as Camden, 200 m. from the sea.

WATERFORD, a S. county of Ireland, in the province of Munster, bounded N. by Tipperary and Kilkenny, from which it is partly separated by the river Suir, E. by Wexford and Waterford harbor, S. by St. George's channel, and W. by the county of Cork; area, 721 sq. m.; pop. in 1861, exclusive of Waterford city, 111,116. The coast is in general bold and rocky, but has 4 good harbors, Waterford at the E. and Youghal at the W., between which are Dungarvan harbor and Tramore bay. The surface is mountainous, the Knockmeledown ridge and the Cummeragh and Monavulagh mountains occupying the greater portion. Copper is found, and some mines of it are worked; there are also lead and iron mines not now worked, potters' clay, and marble. The county is drained by the Suir, which is navigable for large vessels to Waterford, and to Carrick-on-Suir for boats; and by the Blackwater, navigable for small vessels. The great staples of the county are butter and bacon. There are extensive fisheries on the coast, employing about 1,500 men and boys. Waterford sends 5 members to parliament, 2 for the county, 2 for Waterford city, and one for Dungarvan.—Waterford, the capital, a city, parliamentary borough, and seaport, is 97 m. S. S. W. from Dublin, with which, as well as with Limerick and Cork, it is connected by railway; pop. in 1861, 23,220. It is situated on the right bank of the river Suir, 9 m. above its entrance into Waterford harbor, and has an extensive suburb (Ferrybank) on the left bank of the river, which is crossed by a wooden bridge 832 feet long. There are two parish churches, a Roman Catholic cathedral, an exchange, custom house, theatre, &c. The quay extends ¾ of a mile along the river, with a general width of 40 yards, and has sufficient depth of water to allow vessels of 800 tons to discharge their cargoes. The entrances in 1854 comprised 1,147 sailing vessels and 192 steamers, total tónnage 154,809; clearances, 925 sailing vessels and 200 steamers, tonnage 136,647.—The town is said to have been founded in 155, but more probably, according to others, about 850, when Sithric the Dane made it his capital. At the lower end of the quay there is a Danish tower erected by Reginald, son of Imar, in 1003. In 1171 Strongbow, earl of Pembroke, and Raymond le Gros took Waterford and put to death most of the Danish inhabitants. King John gave it its first charter, and resided here for some time. The town was unsuccessfully besieged by Cromwell, but afterward captured by Ireton. There are remains of the old fortifications and relics of ancient monasteries. Curraghmore, the domain of the marquis of Waterford, containing 4,000 acres, is near the city.

WATERHOUSE, Benjamin, M.D., an American physician and author, born in Newport, R. I., March 4, 1754, died in Cambridge, Mass., Oct. 2, 1846. At the age of 16 he began his professional studies with Dr. John Halliburton of Newport, and remained with him 7 years. He subsequently went to England, studied under Dr. John Fothergill in London, and attended the lectures at Edinburgh, and afterward at Leyden, where he was graduated. Returning to America, he commenced the practice of medicine at Newport. In 1783 he was invited to assist in establishing the medical school at Cambridge, and accepted the chair of the theory and practice of physic. During the 30 years which he spent in this office, he encouraged the natural sciences; introduced the study of mineralogy, then almost unknown in the United States; obtained from Dr. Lettsom a large and valuable collection of minerals, the foundation of the present noble cabinet; procured the establishment of the botanical gardens; and gave, perhaps, the first course of lectures on botany and natural history ever delivered in this country. In 1812 he resigned his professorship, and accepted from President Madison the medical supervision of the military posts in New England, which office he held till 1825. In 1799 Dr. Jenner communicated to him his discovery of vaccination, and Dr. Waterhouse at once subjected it to the test of experiment in his own family. For 7 years he vindicated vaccination against the ridicule of the profession and the prejudices of the public, writing and publishing much upon this subject as well as other medical topics. He also contributed largely to the political journals of the day, and wrote "The Botanist" (1811), an "Essay on Junius and his Letters" (Boston, 1831), in which he attributed the letters to Lord Chatham, and sketches of many prominent political characters of England and America during the period of the revolution.

WATERLAND, Daniel, D.D., an English theologian, born at Wasely or Walsely, Lincolnshire, Feb. 14, 1683, died in London, Dec. 23, 1740. He was educated at Magdalen college, Cambridge, of which he became a fellow in 1704 and master in 1713, was appointed chaplain to George I. in 1714, and at the time of his death was vicar of Twickenham, canon of Windsor, and archdeacon of Middlesex. He was chiefly distinguished as a Trinitarian controversialist, especially in opposition to Dr. Whitby, Dr. Samuel Clarke, and others of the Arian party. Beside numerous controversial pamphlets, his chief works are: "Eight Sermons, &c., in Defence of the Divinity of our Lord Jesus Christ" (1720); "A Critical History of the Athanasian Creed" (1724); "Scripture Vindicated" (1730), a reply to Tindal's "Christianity as old as the Creation;" and "A Review of the Doctrine of the Eucharist" (1737). A complete edition of his works, with a biography, was published by Bishop Van Mildert (11 vols. 8vo., Oxford, 1823–'8).

WATERLOO, a village in Belgium, on the outskirts of the forest of Soignes, 10 m. S. from Brussels, near which was fought, June 18, 1815, a memorable battle between the allied English and German troops under the duke of Wellington, and the French under Napoleon, resulting in the complete overthrow of the latter. On the morning of June 15 the forces of Wellington, comprising about 92,000 British, Hanoverian, Brunswick, Nassau, and Netherland troops, were cantoned between the Scheldt river and Nivelles, the duke having his head-quarters at Brussels, where were stationed his reserves; while Blücher, with 3 corps of Prussians, estimated at 90,000 men, occupied Namur, Charleroi, and the adjacent country on both sides of the Sambre. Napoleon, having decided, in view of the overwhelming forces assembling against him, to attack the Anglo-Prussian troops before the Austrian and other German contingents and the Russians could reach the frontier, assumed the command of his forces, comprising 124,000 men of all arms, at Beaumont, about 15 miles S. of Charleroi, on the evening of the 14th, and immediately advanced upon the allies by the Sambre at the point of junction between Blücher and Wellington, hoping by celerity of movement to overwhelm each separately. On the 15th he drove in the Prussian outposts S. of the Sambre and entered Charleroi, which was evacuated by the Prussians, who by 2 A. M. of the 16th were concentrated to the number of 80,000 at Ligny, between St. Amand and Sombreffe, facing the Sambre. The first intelligence of the advance of the French was communicated to Wellington at Brussels at 3 o'clock on the afternoon of the 15th, and two hours later orders were issued to the outlying divisions of his forces to march to the left, and concentrate at Quatre Bras, an important strategic point where 4 roads meet, from Brussels, Charleroi, Nivelles, and Namur. At 4 o'clock next morning the whole army was moving in the same direction, followed shortly afterward by the commander-in-chief, who, for the purpose of allaying public fear, had previously passed a few hours at a ball given by the duchess of Richmond. Napoleon meanwhile, having sent Ney with 40,000 men in the direction of Gosselies to occupy Quatre Bras and prevent the junction of the English with the Prussians, moved with the rest of his army toward Fleurus, and at half-past 2 in the afternoon of the 16th attacked Blücher at Ligny. At about the same time Ney, after fatal hesitation, engaged the Anglo-Netherland forces under command of the prince of Orange at Quatre Bras, distant about 7 miles from Ligny, whither Wellington, who arrived at the former place shortly before noon, had ridden to confer with Blücher. After an obstinate engagement of 5 hours, the Prussians were defeated at Ligny, and retreated in good order in the direction of Wavre; but at Quatre Bras the allied forces, greatly outnumbered at the outset, held their ground until the arrival of the British divisions of Picton and Cooke and other troops, when the French retired, having failed to carry the position, but having succeeded in hindering the junction of the English with the Prussians. A decisive victory might have been secured to the French at Ligny but for the eccentric movements of a powerful corps under D'Erlon, which, through Ney's misapprehension of Napoleon's orders, was kept marching throughout the whole day between the two French armies, without rendering assistance to either. Wellington's troops passed the night of the 16th on the field near Quatre Bras, and at 10 A. M. of the 17th, the defeat of the Prussians and their line of retreat having been ascertained, commenced a retrograde movement toward Waterloo, where they arrived on the same evening. By an arrangement made between Wellington and Blücher on the preceding day, the latter, if defeated, was to join Wellington at Waterloo with the least possible delay. Napoleon passed the morning of the 17th in the neighborhood of Ligny, and, having directed Marshal Grouchy with 34,000 men and 96 guns to "follow up the enemy," proceeded with the main body of his army toward Waterloo, hoping to destroy the Anglo-Netherland army, before it could be reënforced by junction with Blücher's defeated columns. At nightfall he found himself in presence of the British general, but, the day being too far spent to give battle, both armies bivouacked for the night on the open field. The allied forces occupied a ridge of semicircular shape, about a mile and a half in length, lying in front of the village of Waterloo, and the French a corresponding ridge directly opposite, the two armies being separated by a shallow valley from 500 to 800 yards in width. About 400 yards in advance of the British right centre stood the stone chateau of Hougoumont, which was occupied by a strong force; and midway the valley and fronting their left centre was the farm of La Haie Sainte, also strongly occupied. Their left rested upon the hamlets of La Haye, Papelotte, and Frichermont. The allied position, having in its rear the forest of Soignes, was considered so weak by Napoleon, that upon first inspecting it he exclaimed with exultation: "At last I have them; there are ninety chances in a hundred in my favor." His own army was drawn up in 3 lines on both sides of the road leading from Charleroi to Brussels, which also bisected the British line at La Haie Sainte near its centre. In his first line were the infantry corps of Reille and Drouet, with Piré's cavalry; the 2d line consisted of cavalry posted in the rear of the wings, and the 3d line of the 6th corps under Lobau. Behind the whole were the imperial guard, constituting the reserve. Napoleon's head-quarters were at the farm of La Belle Alliance on the Charleroi road, near the centre of his position. The armies confronting each other were of nearly equal strength, the French numbering from 70,000 to 72,000 men, mostly veterans, of whom 15,000 were cavalry, and 240 guns; and the allies about 70,000 men, including 13,500 cavalry, and 159 guns. The English contingent mustered a little over 25,000 men, a large proportion of whom were recruits, the Netherlanders about 17,500, and the rest of the army was made up of Brunswickers, Hanoverians, and other German troops. The whole was characterized by Wellington as "an infamous army, very weak and ill equipped, with a very inexperienced staff." From about midday on the 17th until the next morning an incessant rain had fallen, greatly impeding the movements of the troops; and Napoleon, confident that Grouchy would prevent the arrival of the Prussians, put off the commencement of the battle on the 18th until the ground should become dry enough to admit of the manœuvres of his artillery. The fatality which attended nearly all his calculations and plans during this momentous campaign was in no instance more strongly marked than in this, as the sequel will show. The emperor's intention, as subsequently stated by himself, was to turn the allied left, force it back upon the centre, and gain possession of the highway leading through the forest, Wellington's only line of retreat. To begin this operation it was necessary to draw off the duke's attention to his right, and a powerful column, comprising the divisions of Jerome Bonaparte, Foy, and Bachelu, moved at about half-past 11 o'clock upon the chateau of Hougoumont, which had been pierced with loopholes for musketry, and was occupied by a body of the English guards. The wood surrounding the chateau was taken and retaken several times by the combatants, remaining at last in the hands of the French; but the building itself defied every effort at capture, and at 2 o'clock in the afternoon was still in possession of its defenders. Shortly before this time a body of troops in motion had been seen at a considerable distance on the French right, and a Prussian hussar brought in soon afterward announced that they were the advance of Bülow's corps, which had not participated in the battle of Ligny, but was approaching from Liége, where it had been stationed. To afford additional protection to his right, Napoleon detached 10,000 men under Lobau, comprising the 6th corps, to watch the Prussians, and at the same time sent new orders to Grouchy, to march upon St. Lambert and take the enemy in the rear. The weakening of his centre by the loss of Lobau's troops rendered necessary a change in his plan of battle, and about half-past 1 o'clock Ney received orders to break through the allied centre, and push their right back toward Brussels. Four columns, which Ney had unfortunately disposed in dense and inconvenient masses, accordingly moved against La Haie Sainte, which was carried after a fierce assault; but their progress was here checked by the English division of Picton, who fell at the head of his troops, and by Ponsonby's brigade of heavy cavalry, and the French were forced back in some confusion into the ravine, where Milhaud's cuirassiers came to their assistance and compelled the English to retire. In this encounter the English general Ponsonby received a mortal wound. Ney reformed his troops at the bottom of the slope, and again advanced to the attack, preceded by Milhaud's cavalry and a brigade of the light cavalry of the guard, who, with shouts of *Vive l'empereur*, precipitated themselves upon Gen. Alten's division thrown into squares. After a gallant defence the German troops who held La Haie Sainte were overpowered by the French infantry, and at half-past 3 the farm again fell into the hands of the assailants. The stubborn resistance of the English guards at Hougoumont meanwhile induced the French to direct a battery of howitzers against the building, which, though set on fire by shells and almost gutted by the flames, was held to the last with unflinching obstinacy. But Wellington, perceiving that the attack on this point was relaxing in vigor, now strengthened his centre with troops from his right and rear. His men, however, were growing impatient under a purely defensive line of action, and he was observed to cast many anxious looks toward his left, where Blücher was to appear. A pause in the French operations against the allied centre succeeded the capture of La Haie Sainte, Napoleon being occupied in watching the movements of Bülow's corps, which was beginning to debouch on the French right; and at 4 o'clock Wellington directed two bodies of troops upon the enemy at Hougoumont and La Haie Sainte. The attack upon the latter position was repelled by Ney, who sent for reënforcements to make a decisive onslaught upon the allied centre. Napoleon, unable to spare infantry and obliged to go to the right in person to look after the Prussians, gave him the cuirassiers of Milhaud, not for such an onslaught, but to make good his present position. An error of Lefebvre-Desnouettes, who commanded the light cavalry of the guard, caused him to follow Milhaud, and the fiery marshal, finding these two powerful bodies of horse put under his command, hurled them in succession upon the squares of the enemy. Napoleon, becoming aware of what Ney was doing, exclaimed: "It is too soon by an hour." Nevertheless, in order to sustain the enterprise thus begun, he ordered part of Kellermann's cuirassiers to Ney's assistance. Behind these were standing 2,000 heavy cavalry of the guard, and some of their officers going forward to behold Ney's unprecedented charges, and becoming excited and shouting over what they supposed to be a victory, were understood by their men to give the signal for an advance, and this last indispensable corps of horsemen were soon mingled in the terrible *mêlée*. Napoleon sent Bertrand to hold them back, but he came too late; Ney had already launched them against the allied line, which, though resisting with desperate tenacity, had begun to waver, and, could Ney have had the infantry he desired, would have been utterly overwhelmed. A French division under Durutte had meanwhile carried La Haye, Papelotte, and Smohaine on the allied left; and Lobau, strengthened by reënforcements from the guard, had driven Bülow's forces out of the village of Planchenois on the French right. But rumors of the approach of Blücher's army now began to inspire renewed courage in the allies, and to dampen in a corresponding degree the ardor of the French; and soon after 7 o'clock, Napoleon, despairing of the expected coöperation of Grouchy, collected 4 battalions of the middle guard and 6 of the old guard for a last desperate effort against the allied centre. The middle guard, led by Ney, advanced with much spirit upon the enemy, but had scarcely commenced the attack when a cry of consternation arose along the French right caused by the appearance of Ziethen's Prussian corps in that direction. La Haye and Papelotte were speedily retaken, and the 6 battalions of the old guard found it necessary to separate themselves from those of the middle guard, and form in squares across the field in order to cover the retreat of Durutte's fugitives. The middle guard meanwhile, assailed in front and flank by the allies, held their ground under a murderous fire which rapidly thinned their ranks. Ney, covered with dust and blood, with his clothes torn and his head bare, but still unwounded, though 5 horses had been shot under him, headed them on foot sword in hand, with desperate heroism. But the growing confusion in the French right wing, flanked by the advancing Prussians and now in full retreat, demoralized these hitherto unconquered veterans, and they retired in irreparable confusion. The other 6 battalions however held their ground persistently against overwhelming numbers, and in firmness and heroic courage fairly surpassed their well earned reputation. The dispersion of the French right by the cavalry brigades of Vandeleur and Vivian, which the French cavalry, uselessly sacrificed by Ney at an earlier hour of the day, might have prevented, isolated them from the rest of the army, but still they stood firm. Finally, when 5 squares were broken and those remaining began to show signs of exhaustion and depletion, the emperor gave the order for their withdrawal, and the cry, "The guard is repulsed," repeated over the field, converted retreat into a flight. At this moment Wellington advanced his whole line of infantry, and the Prussians falling simultaneously in overpowering force upon the French, the rout of the latter became complete. Napoleon, however, had one regiment of the guard left, and with this thrown into square and a few pieces of half dismounted cannon, he endeavored to form a rallying point for the fugitives. Failing in this, he expressed his determination to die within the square, but was hurried away by Soult, the guard covering his escape. The heroic band were soon surrounded by their pursuers, who called upon them to surrender. "The guard dies, and never surrenders," is the reply popularly attributed to Gen. Cambronne; and with one last shout of *Vive l'empereur*, the remnant of the guard charged impetuously upon the enemy and perished almost to a man. "That glorious immolation," says M. Brialmont, "consoles, to this day, the French people for the most terrible disaster which their arms ever sustained." At half-past 9 in the evening Blücher and Wellington met at Maison du Roi in the rear of the late French centre, and the former continued the pursuit of the enemy, who were never permitted to rally. The total loss of the allies, including the Prussians, was 23,185, and that of the French 26,300, beside 227 pieces of cannon.—Of the repeated orders despatched to Grouchy at 10 the previous evening, at 3 A. M., and again immediately before the battle, neither reached him till 4 P. M. Long before that hour, Gérard and Vandamme, excited by the sound of the cannonade upon the field, had besought him to break off his vague and mistaken pursuit of the Prussians, and march in that direction, but he refused. When Napoleon's messenger reached him, there was still time by a flank movement against the Prussians to save the day; but he again with fatal obstinacy persisted in following the ambiguous language of Soult's despatch rather than the explicit verbal orders of Napoleon himself, which the messenger had brought. He accordingly made a useless attack upon a corps which Blücher had left at Wavre, and thus the last great battle of Napoleon was lost. "Nothing," says M. Thiers, "can extenuate the fault of Marshal Grouchy except his former services, which were real, and his intentions, which were loyal and devoted." "As for this battle," says the same author, "no one can deny that the plan and the execution were all that could be expected of a consummate commander." "Never," says Wellington on the other hand, writing to Lord Beresford, "did I see such a pounding match. Both sides were what the boxers call gluttons. Napoleon did not manœuvre at all. He just moved forward in the old style in columns, and was driven off in the old style. The only difference was that he mixed cavalry with his infantry, and supported both with an enormous quantity of artillery."

WATERLOO, a W. central county of Upper Canada, traversed by the Toronto and Goderich branch of the Grand Trunk railway; area, 513 sq. m.; pop. in 1861, 38,696. It is drained by the Grand river. Capital, Berlin.

WATERLOO, Antoni, a Dutch painter and engraver, born near Utrecht about 1618, died in 1682. He was an excellent painter of landscapes, but is more especially celebrated for his etchings, principally of rural scenery in the vicinity of Utrecht, of which 137 have been described by Bartsch and Weigel. Good impressions, which, owing to his peculiar manner of working, are rare, command high prices, and are accounted among the most masterly productions of the etching needle.

WATERMELON. See Melon.

WATERPROOF CLOTH. See Caoutchouc.

WATERS, Mineral. See Mineral Waters.

WATERTOWN, a township and the capital of Jefferson co., N. Y., situated on the Black river, and on the Rome, Watertown, and Ogdensburg railroad, 86 m. by railroad N. W. from Utica, and 182 from Albany; pop. of the township in 1860, 7,572. The Black river at the village of Watertown affords a very large amount of water power. The river is crossed within the limits of the village by 3 road and 2 railroad bridges, one of the former a wire suspension bridge. The village has an academy, 5 newspaper offices, one of which publishes a daily paper, 5 banks, 9 churches, and two public squares, each ornamented by a handsome fountain, fed by water works which also supply the village. There are in the village manufactories of cotton and woollen goods, flour, paper, iron castings, machinery, leather, agricultural implements, lead pipe, sash and blinds, and furniture. An ice cave near Whittlesey's point extends under a part of the village.

WATERVILLE, a post village and township of Kennebec co., Me., on the right bank of the Kennebec river at Ticonic falls, and 82 m. N. N. E. from Portland, with which it is connected by the Kennebec and Portland and Androscoggin and Kennebec railroads, and 55 m. W. by S. from Bangor, by the Kennebec and Penobscot railroad; pop. in 1860, 4,425. The falls give a large water power, which is as yet only partially used; but the town has a large plough manufactory, an axe, hoe, and scythe factory, beside grist mills, carding machines, plaster mills, tanneries, machine shops, &c. It has 6 churches (2 Baptist, 1 Congregational, 1 Freewill Baptist, and 2 Universalist), an academy, 14 school districts, and 22 schools. It is the seat of Waterville college, founded in 1820, under the direction of the Baptists; the college has 3 buildings, and in 1860 had 6 instructors, 400 alumni, 117 students, and 15,500 volumes in its libraries.

WATKINSON, David, an American merchant and philanthropist, born at Lavenham, Suffolk, England, Jan. 17, 1778, died in Hartford, Conn., Dec. 13, 1857. His early education was conducted in part by Mrs. Barbauld. He came to America with his parents in 1795, and settled at Middletown, Conn., and was for some years employed in the counting house of Samuel Corpy, a New York merchant. In 1800 he commenced business in Hartford with his brother William, and in 1841 retired with a large fortune. By his will he gave $40,000 to the Hartford hospital, $20,000 to the orphan asylum, $40,000 for the foundation of a juvenile asylum and farm school for neglected and abandoned children, $100,000 for a library of reference in connection with the Connecticut historical society, $5,000 to the widows' society, $3,000 to the Connecticut retreat for the insane, in aid of an institution for idiots, $5,000 for a house of refuge for discharged criminals, and $1,000 each to the Wadsworth Athenæum, Connecticut historical society, and young men's institute. He also made the trustees of the library of reference residuary legatees of his estate, which yielded a further considerable sum.

WATSON, Elkanah, an American merchant and agriculturist, born in Plymouth, Mass., Jan. 22, 1758, died in Port Kent, N. Y., Dec. 5, 1842. At the age of 15 he was indentured to John Brown of Providence, the founder of the great mercantile house of his name in that city, and at 19 was sent by his employer to Charleston and other southern ports with more than $50,000 to be invested in cargoes for the European markets. The journey, performed on horseback and in a sulky, was successful, and his journal, kept carefully on the route, and subsequently published, is the best account we possess of the principal towns and villages of the colonies at the time of the revolution. In 1779 he accepted proposals made to him by Mr. Brown and others to go to France as their partner in a foreign house, and by the advice of Dr. Franklin and others opened a commercial house at Nantes. After 3 years of success, he lost most of his property by the financial reverses which then took place in France, and in 1784 returned to America. Soon afterward he went to North Carolina, and engaged in a new partnership for a traffic between that state and Port au Prince. This partnership continued for about 4 years, when it proved unsuccessful, and Mr. Watson returned to Providence. In 1789 he removed to Albany, where for the next 18 years he was an active promoter of various public enterprises, including the Oneida lake or Wood creek and Schenectady canal, and the improvement of the navigation of the Hudson above Albany, the precursors of the Erie and Champlain canals; the establishment of the Albany bank, and the paving of that city; the organization of stage routes west; and the advancement of education, both common school and collegiate, in the state. In 1807 he removed to Pittsfield, Mass., to devote himself to an agricultural life, and in 1816 returned to Albany, and organized the first agricultural society in the state of New York. He visited Michigan and examined the advantages of the lake region for future trade; and explored the route to Montreal, with a view to its improvement and connection with Boston and New York. In 1828 he removed to Port Kent, on Lake Champlain. Mr. Watson contributed almost constantly to the periodical press, and published numerous pamphlets and volumes on topics of current interest. An abstract of his journals, including an unfinished autobiography, was published by his son, Winslow C. Watson, in 1855.

WATSON, John, M.D., an American physician and medical writer, born in Londonderry, Ireland, April 16, 1807. His parents, who were of Scotch descent, emigrated to the United States in 1810, and in 1818 settled in New York. He commenced the study of medicine in 1827, and took his medical degree in 1832, having for some months previously been house surgeon of the New York hospital. In 1833 he was appointed one of the physicians of the New York dispensary, retaining a connection with the hospital, of which he was from 1839 to 1862 one of the attending surgeons. He introduced great reforms and improvements into the latter institution, rendering it finally, both as a hospital and a place of instruction, one of the most complete in the country. In 1836, in connection with Dr. H. D. Bulkley, he established an infirmary for cutaneous diseases, which within a few months led to the organization of the "Broome street School of Medicine," in which Dr. Watson held the chair of surgical pathology. This school was finally merged in the "extra course" of the college of physicians and surgeons, where, as well as at the hospital, he continued to lecture on surgical pathology. Dr. Watson was one of the prime movers in the organization of the New York medical and surgical society, the American medical association, and the New York academy of medicine; and of the last named institution he was for several years president. Beside many contributions to medical periodicals, and to the "Transactions" of the New York academy of medicine and the American medical association, Dr. Watson has published the following works: "Thermal Ventilation and other Sanitary Improvements applicable to Public Buildings, and recently adopted in the New York Hospital" (8vo., New York, 1851); "The Medical Profession in Ancient Times" (1856); "The Parish Will Case critically examined, in reference to the

Mental Competency of Mr. Henry Parish to execute the Codicils appended to his Will" (1857); and "The True Physician" (1860). He has ready for the press two works embodying in popular form the results of 30 years' practice, entitled "Obscurities of Disease," and "Clinical Acumen, or the Sources of Misjudgment in the Study of Disease;" and his most extensive work, a "History of Medicine," is (Nov. 1862) approaching completion.

WATSON, John Fanning, an American antiquary and annalist, born at Batsto, Burlington co., N. J., in 1780, died in Germantown, Penn., Dec. 23, 1860. He was for many years a bookseller in Philadelphia, and employed his leisure in gathering items of interest in regard to the early history of Philadelphia, which he published under the title of "Annals of Philadelphia" (8vo., 1830; 2d ed., 2 vols., 1844). The success of this work led him to collect and publish some incidents of early and revolutionary history pertaining to New York and Pennsylvania, under the titles of "Historic Tales of the Olden Times in New York" (1832), and "Historic Tales of the Olden Times in Pennsylvania" (1833). He published in 1846 "Annals of New York City and State," and in 1856 a "History of the United States."

WATSON, Richard, an English prelate, born at Heversham, near Kendal, Westmoreland, in Aug. 1737, died at Calgarth park, Westmoreland, June 4, 1816. He was educated at Trinity college, Cambridge, where in 1764 he was chosen professor of chemistry. He was then quite unacquainted with the science, but by incessant application mastered it sufficiently to make his lectures instructive and satisfactory. In 1771 he was made regius professor of divinity. In 1780 he became archdeacon of Ely, and in 1782 was made bishop of Llandaff. His principal works are: "An Apology for Christianity, in a Series of Letters addressed to Edward Gibbon, Esq." (12mo., London, 1776); "Chemical Essays" (5 vols. 12mo., 1781-'7); "A Sermon on the Wisdom and Goodness of God, in having made Rich and Poor" (1785); "An Apology for the Bible, in a Series of Letters addressed to Thomas Paine" (1796); and "Miscellaneous Tracts" (1815). His autobiography, "Anecdotes of the Life of Richard Watson," was published by his son (London, 1817).

WATSON, Richard, an English clergyman and author, born in Barton-upon-Humber, Feb. 22, 1781, died in London, Jan. 8, 1833. At the age of 14, after becoming a good Latin and Greek scholar, he was apprenticed to a carpenter, but in the following year, having joined the Methodists, commenced preaching, and was released from his indentures. In 1797 he became a member of the conference, and in 1800 was received into full connection. Some time afterward he joined the seceding body called the Methodist New Connection, of the conference of which he was appointed secretary, was stationed alternately at Manchester and Liverpool, and was for some time editor of the Liverpool "Courier;" but returning to the Wesleyan connection, he soon became known as one of its most effective preachers. Being stationed in London, he was appointed in 1817 one of the secretaries of the missionary society, which office he held for the rest of his life; for 6 years he was resident secretary, and directed his attention to the theological training of missionaries. In 1826 he was elected president of the conference. His chief works are: "A Defence of the Wesleyan Methodist Missions in the West Indies;" "Remarks on the Eternal Sonship of Christ, and the Use of Reason in Matters of Revelation," in answer to Dr. Adam Clarke; "Theological Institutes, or a View of the Evidences, Doctrines, Morals, and Institutions of Christianity" (6 parts, 1823-'8), which has become the universal standard text book of theology among Methodists; "Conversations on Scripture for the Young" (1830); a life of Wesley, written at the request of the conference; a "Biblical and Theological Dictionary;" and several volumes of sermons. After his death the English Methodist book agency published a collection of his literary remains. His life has been written by T. Jackson, who has also edited a collection of his works in 13 vols. 8vo.

WATSON, Robert, a Scottish author, born in St. Andrew's about 1730, died March 31, 1781. He was educated at the universities of St. Andrew's, Glasgow, and Edinburgh, and in 1751 delivered in Edinburgh a series of lectures on English literature, which gave him considerable reputation. He afterward became by purchase professor of logic in St. Salvador's college, and was by patent from the crown made professor of rhetoric and belles-lettres; and he substituted for the course of logic, previously confined to figures, modes, and syllogisms, disquisitions upon the mental powers. In 1777 he became principal of the united colleges of St. Leonard and St. Salvador. He wrote a "History of Philip II. of Spain" (London, 1777), which was immediately translated into French, Dutch, and German. This was so successful that he began a history of Philip III., 4 books of which were finished at the time of his death; the work was continued and published by Dr. William Thomson, (4to., London, 1783). His histories are of little value.

WATT. I. James, a Scottish mechanician, engineer, and inventor, born in Greenock, Jan. 19, 1736, died at his estate of Heathfield, near Birmingham, Aug. 25, 1819. His father was a merchant and builder in Greenock, and for many years held important offices in the town; but the loss of his fortune and prostration of his faculties later in life occasioned his withdrawal from business. Thus James Watt, who had been almost wholly forbidden, through an extreme delicacy of constitution, to acquire in his childhood a systematic education, was prevented from making the desired attainment in his youth by untoward circumstances; but his ill health, often such as to confine him to his chamber, led him into habits of reading and studying much at home. He early showed a great fondness for mathematics and mechanical contrivances, and at about the age of 14 he constructed for his own use an electrical machine. Arago relates that an aunt, Miss Muirhead, who had but a low estimation of his powers and manner of life, appears about the same period to have complained of his (to her) idle and unprofitable occupation in watching the boiling tea-kettle, taking off and replacing the lid, observing the exit of steam from the spout, holding a saucer or spoon over the escaping jet, and counting the drops of water that condensed on it. Having made considerable attainments in botany, chemistry, and mineralogy, still more in natural philosophy through study of a translation of 'sGravesande's *Physices Elementa Mathematica*, and also in medicine and surgery, at the age of 18 he went to Glasgow to learn the art of a maker of mathematical instruments, in which he had already acquired some skill in the establishment of his father, who had supplied the instruments required for ships' use. Among the eminent men at that time connected with the university were Adam Smith, Dr. Black, Robert Simson, and Dr. Dick; and though he neither at this time nor during his subsequent stay attended any of the lectures at the college, yet he formed the acquaintance and secured the friendship of many of the professors, among whom Drs. Black and Dick may be especially mentioned. After a year's residence here, by the advice of Dr. Dick, he proceeded in 1755 to London to learn his trade more fully, and there passed about a year, when ill health compelled his return home. He was soon afterward employed to clean and refit a quantity of astronomical instruments sent from Jamaica as a bequest to the university, and damaged by action of the sea air. His intention to set up his business in Glasgow called forth opposition from the corporations of trades of that town, on the ground that he was not a burgess; but the faculty of the university (about 1757) allowed him to establish his workshop within their precincts, and gave him the title of instrument maker to the institution. While here, he was found by the students both able and willing to assist them in many of the difficulties occurring in their scientific studies; and Mr. (subsequently Professor) Robison, then a student in the college, particularly expresses his surprise at finding in young Watt not merely an intelligent workman, but a philosopher also; the friendship thus formed proved very intimate, and to Watt, as will appear, the source of some valuable suggestions. By study at night during this period, he mastered German and Italian, for the sake of perusing certain treatises in those languages; and though destitute of the perception of melody, he also so far perfected himself in the theory of music as to construct an organ of excellent quality, and furnished with valuable improvements of his own. It appears to have been about the year 1755 that Watt's attention was first decidedly called to the subject of the motive power of steam, his friend Robison suggesting to him the possibility of propelling land carriages by its agency; the model of an engine for that purpose was begun, but soon after abandoned. About 1761–'2 he tried experiments on the force of steam in a "Papin's digester;" and also constructed and worked a small cylinder, consisting of an inverted syringe, to the rod of which a known weight was suspended, the steam being admitted below the piston to lift the weight, and then let off into the atmosphere. This was in principle a high-pressure engine; but he soon abandoned this form, and appears ever afterward to have entertained a prejudice against its employment. In 1763 he removed from the university into the town, preparatory to his marriage with his cousin Miss Miller; since, as she was the daughter of a freeman, this union rendered him also a freeman, and removed the disability under which he had labored. He opened a shop in the Salt market, and employed an assistant, John Gardiner, with whose aid he afterward renewed his experiments on steam. The event which determined his efforts more positively in this direction was his having sent to him in the winter of 1763–'4, for examination and repair, a small model of a Newcomen's or atmospheric engine—the most successful form as yet in use—which was employed by Professor Anderson in instructions in his class. Beside incidental repairs, he shortened the pipe and the column of water to be lifted by the model, the column having been too long for the quantity of steam the cylinder could receive; and the model was thus made to perform satisfactorily. But in the mean time he had carried his observations further, and discovered the necessary defect existing in these engines, in consequence of two apparently irreconcilable conditions under which they must be worked; viz.: 1, that the cylinder once filled with steam should if possible be almost instantly cooled to such a temperature as to effect a sudden and entire condensation of the steam; 2, that immediately upon completion of the resulting stroke of the piston, the temperature of the cylinder ought (for economy) to be so elevated that the steam freshly admitted should retain the heat and tension possessed by it, so as at once to commence the return of the piston. But a considerable quantity of the steam then first admitted parted with its heat to raise the temperature of the cylinder, and was condensed; while, when the piston was elevated, some time was required to cool the cylinder again so as to effect the condensation then desired. The results were a great waste of steam in one part of the movement, and an injurious loss of time in both. Watt thus clearly saw that a great gain in power of the engine would necessarily result, if it were possible, while making the condensation of the steam after filling the cylinder very complete, to preserve the temperature of the cylinder itself for the succeeding charge. It was not until several months later that the means of accomplishing these results occurred to his mind. In the interval he continued his experiments, making for this purpose a cylinder of 9 inches diameter and 1 foot stroke, the material being wood soaked in oil and baked to dryness. With this, and the use of a boiler of peculiar arrangement, he ascertained that the evaporation of boiling water is not, as had been supposed, proportional either to the amount of evaporating surface or to the quantity of the water, but really to the quantity of heat that can be made to enter the water; he also determined very nearly the weight of coal required to evaporate a certain quantity of water, and that the expansion of the latter in entering into the form of steam is in a ratio not far from that of a cubic foot for a cubic inch (now known to be about 1660 : 1). He was also in part occupied about this period in the practice of land surveying and civil engineering; and to these pursuits he gave a considerable portion of his time till at least as late as 1778. It was early in 1765 that he first conceived the idea of that device which should satisfy the requirements he had previously determined to exist in order to the perfection of the steam engine, namely, the use of a separate condensing chamber, which should remove all necessity of applying cold water to or within the cylinder. For an account of the principal other devices which followed as consequences upon this arrangement, or as means of rendering the engine practically complete, as well as for the chief points of interest relative to the subsequent invention in 1782 and 1784 of the double-acting engine and certain parts of steam mechanism in general, see Steam Engine. In respect to his earliest inventions, he himself says: "When once the idea of the separate condensation was started, all these improvements followed as corollaries in quick succession; so that, in the course of one or two days, the invention was thus far complete in my mind, and I immediately set about an experiment to verify it practically." In 1768 Dr. John Roebuck, founder of the Carron iron works, to whom Watt was known as a surveyor, was led to take an interest in the new inventions; and through his aid Watt was enabled in the winter of that year to commence a third and larger model. The cylinder of this was of block tin, 18 inches in diameter; and among the many difficulties to be overcome was that of substituting for the covering of water previously used over the head of the cylinder an effective arrangement of packing about the piston. After 8 months the machine was brought to operate; and the saving of steam and of fuel, as well as of the supply of water needed for condensing purposes, at once satisfied the parties concerned of its success. A patent, before applied for, was obtained Jan. 5, 1769, Mr. Roebuck to have a share of two thirds in any profits that might accrue. The mining speculations of the latter having soon after led to his embarrassment and abandonment of the enterprise, Watt returned to the business of engineering. Among the surveys and works superintended by him about this time were those of a canal between the Forth and Clyde, another for the Monkland collieries, the Crinan canal, the deepening of the Clyde, the improvement of the harbors of Ayr, Port Glasgow, and Greenock, the construction of bridges, and finally the preparatory survey for the Caledonian canal. While engaged upon this, in 1773, he received news of the death of his wife, and soon afterward, upon the recommendation of his friend Dr. William Small, he secured the transfer to Matthew Boulton, of Birmingham, of Dr. Roebuck's interest in the steam engine, and himself removed to Soho, the seat of Mr. Boulton's works. By his business habits, extended acquaintance, sagacity, and energy, Mr. Boulton appears to have been peculiarly fitted for the work thus devolving upon him, of aiding toward the complete development of the steam engine, and then securing its actual introduction into use. The connection was established in 1774, resulting in the business firm of Boulton and Watt, in which both the original partners remained until Watt's withdrawal in 1800; while the business, under the same title, is continued by their descendants to the present day. By the close of 1774 Watt completed at Soho his fourth and hitherto most finished engine, the performance of which was all that could be desired. In view, however, of the fact that 5 years of the patent had already expired, and of the necessarily great expense of manufacturing and introducing the new engine, the projectors at once applied to parliament for an extension of the patent. This, notwithstanding very great opposition, was granted in 1775, to run for 25 years from its date. In the same year Mr. Watt married his second wife, a Miss Macgrigor. Among the many difficulties in the way of the new business, not the least was that at first experienced in obtaining workmen who could execute the parts of the engine with the precision of form and adaptation required. The patentees invited inspection of the working of the engine, with a view to prove its economy and efficiency, and deputations of Cornish miners, as well as many others interested, in this way satisfied themselves of its superiority. Adopting a policy at once liberal and shrewd, they made their terms simply the payment to them, as a sort of rent, of a sum equal to one third the saving in cost of fuel (in proportion to the work done) effected by the substitution of their engines for Smeaton's or other atmospheric engines then in use; and they even accepted the latter, when desired, at a full valuation, in part payment. Their liberal spirit was further shown in their admission of 33,000 lbs. as a horse power, in place of previous lower standards, and their estimating the performance of their engines, by capacity, at a "nominal horse power" which was in all cases much below the actual. To avoid the expense and uncertainty likely to attend inspection of the work of engines by agents, Watt devised the indicator, an apparatus which automatically exhibits and registers the work of the engine, and thus may be consulted as often as is requisite. Under a management of the business at once so energetic and enlightened, the new engines rapidly replaced the old, and a very large and continued remuneration was the result. Mr. Watt now applied himself to devise the means of rendering the engine double-acting, so that it could be made directly serviceable in the way of turning machinery, and that a greater effect might be secured within a given time; his patent for this, the crowning improvement in the engine, was obtained in 1782. He devised the application of the crank, but was prevented from adopting it by being forestalled by others in the procurement of a patent; his son declares, however, that in lieu of certain devices of his own for otherwise effecting a rotatory movement, he did at times employ the crank, and without interference on the part of the patentees, after the expiration of whose claim, of course, the use of this as the best means offering for its purposes became the rule. To accomplish all that was found requisite to the perfecting of the engine cost Mr. Watt years of the most earnest intellectual effort and application; and although he was now continually sustained by pecuniary success, and ultimately in every case by the attainment of the ends sought, yet this labor, in connection with the harassing anxieties of lawsuits in which he was during a part of the time engaged, drew severely upon the capabilities of a naturally feeble constitution. As the grand result, however, he stands finally as the inventor rather than the improver of the steam engine, having conferred on that machine the wonderful capabilities so well depicted by Lord Jeffrey, who says: "By his admirable contrivances, it has become a thing stupendous alike for its force and its flexibility, for the prodigious power which it can exert, and the ease and precision and ductility with which it can be varied, distributed, and applied. The trunk of an elephant, that can pick up a pin or rend an oak, is as nothing to it. It can engrave a seal, and crush masses of obdurate metal like wax before it; draw out, without breaking, a thread as fine as gossamer, and lift a ship of war like a bauble in the air. It can embroider muslin, and forge anchors; cut steel into ribbons, and impel loaded vessels against the fury of the winds and waves." Notwithstanding the merited encomiums received by the new engine, and the comparatively admirable manner of its working, certain interested parties, and among them many of the Cornish miners who were reaping the greatest benefits of the invention, commenced about the year 1790 a systematic and persevering attempt to deprive the firm of Boulton and Watt of their patent and emoluments. A series of trials were entered upon, extending from 1792 to 1799, in which, strange to say, among the points most insisted on by their prosecutors, and most difficult to meet to the satisfaction of the courts and a portion of the public, were, that Watt's inventions were no more than so many abstract discoveries in science, or that he had invented nothing but ideas, and that the engines the firm were then making were more perfect in many details than could be fabricated from the specification of 1769, so that they could not be covered by that claim! These pretexts were at last overruled by a decision of the courts, and the validity of the patents fully sustained. The sons of Messrs. Boulton and Watt having been in 1794 admitted into the firm, Mr. Watt, soon after the close of the contest just referred to (in 1800), resigned his share in the business, and retired to private life. Along with Priestley, Darwin, Edgeworth, and other scientific men residing about Birmingham, Watt had for some years belonged to an association called the "Lunar Society," meetings of whose members for social converse were held monthly on the night of the full moon. Either from a suggestion thrown out at one of these gatherings, or (as his son declares) in order to preserve copies of important papers without the necessity of imparting the information to an amanuensis, Watt invented a form of copying press, which proved of great utility to himself and others who employed it. In 1784–'5 he first put up pipes for heating a room by steam—that in which he drew and wrote—though this is said to have been first suggested by a Col. Cooke in 1745; and the plan was soon introduced by the firm on a larger scale as a means of warming buildings. In some of his earliest experiments he made the discovery how large an amount of heat disappears from the sensible form in the conversion of water into steam, and heat which must of course be restored to the sensible state upon the recondensing of the steam into water; and he appears to have learned only after conversing with Dr. Black upon the subject, that the fact was a general one, and embraced in the theory of the latter upon latent heat. Among other important businesses in which he was interested at various periods between 1760 and 1800, and many of which consisted in the application of new principles of science to art, were the establishing of a pottery near Glasgow; the introduction into England on his return from Paris, which he visited in 1786, and the establishment on a large scale, of Berthollet's mode of bleaching by chlorine; the designing of apparatus for procuring and administering the gases then rendered so popular in certain diseases by Dr. Beddoes, at his pneumatic institution, Clifton —a subject in which he was led through the feeble health of his daughter and of his youngest son to interest himself, and upon which he wrote two pamphlets; the preparation of a composition resembling marble, and during the last years of his life, he devised a machine for multiplying from this busts and imitations of carved work. After his retirement, he occasionally interested himself in engineering labors, among which was the contrivance of the plan of a jointed and flexible metallic pipe, for conveying a supply of water across the Clyde at Glasgow, and upon certain works under the direction of the admiralty. In 1814 he revised Prof. Robison's article, "Steam," for a new edition of the "Encyclopædia Britannica." At one period in his life he appears to have considered himself entitled to the honor of having first shown and announced the fact of the composition of water from the two gases, hydrogen and oxygen; and this claim was urged in his behalf by others, especially by his son. It is noticeable, however, that in his later life, in revising the article above named, he left unchanged Robison's credit to Cavendish of "the great discovery of the composition of water;" and while the latest verdict of scientific authorities confirms this award, it is still evident that Watt's mind was among the foremost in attaining a true understanding of the subject, to which he especially aided in calling attention. About the year 1790 he purchased an estate called Heathfield, near Soho, on which he resided to the end of his life.—Mr. Watt's mind appears to have been characterized by a remarkable quickness, clearness, and breadth of comprehension, in virtue of which it excluded all irrelevant matters as by intuition, and at a glance placed the facts and principles with which it had to deal in their true relations and dependence. His memory was tenacious; and by constant study and reflection his stores of knowledge had not only become very great, but also exceedingly ready and capable of being presented with pertinence to almost any topic that might be broached in his presence. He was fond of society, and agreeable in conversation, which he enlivened with a keen discrimination and quiet humor; though he had a great abhorrence for all manner of pretension, which he never failed to rebuke by an honest bluntness of manner and speech. He was in 1784 made a member of the royal society of Edinburgh; in the following year, of that of London; in 1787, of the Batavian society; in 1808 and 1814, successively, correspondent and foreign associate of the French institute; and he received in 1806 the degree of LL.D. from the university of Glasgow. His remains were deposited in the chancel of the church of Handsworth (near Soho), by the side of those of Mr. Boulton. Among the statues erected to his memory are one in a church at Handsworth built by his son, and one in Westminster abbey. Beyond his communication to the royal society in 1783 on the subject of water, Mr. Watt appears to have left little in the nature of scientific or other writings of permanent interest.—See "Life of James Watt," translated by J. P. Muirhead from the *Éloge* delivered by Arago before the French academy of sciences in 1834 (4to., 1839); also Muirhead's "Origin and Progress of the Mechanical Inventions of James Watt" (3 vols., 1854), and his "Life of James Watt" (1858). II. JAMES, eldest son of the preceding, born Feb. 5, 1769, died at his seat near Birmingham, June 2, 1848. He paid particular attention to the study of natural philosophy, chemistry, and mineralogy, was for a short time in his 20th year a secretary of the literary and philosophical society of Manchester, and in 1789 contributed to its memoirs two papers on the mineral barytes. Soon after, accompanied by Thomas Cooper, who was subsequently professor of chemistry in South Carolina college, Columbia, S. C., he visited Paris for scientific study; but, diverted from their purpose by the revolutionary excitement of the time, both entered, along with the poet Wordsworth, into active sympathy with the movements of the day. Watt was at first in high favor with the revolutionary leaders; but becoming averse to the excess of their proceedings, he was denounced before the Jacobin club by Robespierre as an emissary of Pitt, and though he triumphantly vindicated himself, he was obliged to escape for his life into Italy. Returning to England, in 1794 he became interested as a partner, along with his brother Gregory and Robinson Boulton, in the manufactory at Soho. From this time he took an active part in the progress of steam navigation, especially in the adaptations requisite in marine engines. In 1817 he purchased the Caledonia, of 102 tons burden, one of Mr. Bell's unsuccessful steamers, fitted it with new engines, and made a trip with it to Holland, ascending the Rhine to Coblentz; and after his return the next spring he made 31 series of experiments, which resulted in the introduction of very material improvements into marine engines, and through which the manufacture of these has since continued to be an important branch of the business at Soho. In 1823 Mr. Watt wrote for the "Encyclopædia Britannica" the life of his father, which with some slight alterations appears in the latest edition of that work (1853-'60). He also wrote a letter to Mr. Muirhead on his father's claims relative to the discovery of the composition of water, which appeared in the work of the latter on that subject in 1846. He was never married. III. GREGORY, half brother of the preceding, born in 1777, died Oct. 16, 1804. His entrance into the firm at Soho, above referred to, occurred when he was 17 years old; but he continued his education, leaving the university at Glasgow in 1797, advanced beyond his age both in science and literature, but already in declining health. His physician recommending a residence in the west of England, he went in the winter of the same year to Penzance, taking lodgings in the house of the mother of Humphry Davy, between whom and himself a warm intimacy grew up. After the retirement of their father in 1800, Gregory continued to be relieved in the main by his brother James from the care of the business; he devoted himself to scientific researches, travelling and residing in 1801–'2 on the continent. In April, 1804, he addressed to the Hon. C. Greville a paper entitled "Observations on Basalt, and on the Transition from the Vitreous to the Stony Texture, which occurs in the gradual Refrigeration of melted Basalt," &c. ("Philosophical Transactions," 1804). He had fused 7 cwt. of basalt, and suffered it to cool slowly in mass; then, breaking it up, he had observed the structure of the different parts, the crystallization of the middle portion, which had necessarily cooled most slowly, being found the most complete. The results detailed in this communication have been the foundation of all that is yet known relative to the mode of formation of the columnar rocks, and have had important bearings in the theory of the igneous rocks in general. But this, the first, was destined to be also the sole record of Mr. Watt's scientific ability, as he died 6 months later, after a lingering illness.

WATT, James Henry, an English engraver, born in London in 1799. He was educated in the studio of Charles Heath, and first brought himself into notice by an excellent line engraving of Stothard's "Procession of the Flitch of Bacon." Among his subsequent works may be mentioned his rendering of Landseer's "Highland Drover's Departure," which has been pronounced the finest line engraving yet executed from any of that master's pictures; "May Day in the Reign of Queen Elizabeth," after Leslie; "A Courtyard in the Olden Time," after Landseer; "Christ blessing Little Children," after Eastlake; and some small plates for books.

WATTEAU, Antoine, a French painter, born in Valenciennes in 1684, died at Nogent, near Paris, in 1721. He went to Paris in 1702 with a scene painter, and afterward became a journeyman house painter. Having attracted some attention by a signboard representing a paint shop, which he painted to hang over his employer's door, he was enabled by some patrons to enter the studio of Claude Gillot. He improved his style and coloring by assiduously studying the works of Rubens and Vandyke, and gained admission to the academy of fine arts by a painting known as "A Journey to Cythera." His works were now eagerly sought for, and he produced a number of landscapes and representations of rural fêtes, balls, and masquerades, remarkable for coloring and an elegant though mannered style. Exhausted by labor and free living, he died in the zenith of his success. He left 563 works of various kinds, which have been engraved in 3 large volumes. Several of his best pictures are in the Louvre.

WATTLE BIRD, an Australian member of the family of honey eaters and genus *anthochæra* (Vig. and Horsf.). The bill is moderate, slender, and curved; the wings moderate and rounded, the 5th and 6th quills equal and longest; tail long, wide, and graduated; there is a naked, pendulous, reddish caruncle or wattle on each side of the throat, whence the name applied by the English colonists; tarsi short and strong, and the claws curved and sharp; the tongue is long, with a brush-like tip. The *A. carunculata* (Vig. and Horsf.) is about as large as a magpie, grayish brown above, each feather striped and bordered with white, the tail brown and tipped with white, and lower parts lighter, yellowish on abdomen. It is a bold and restless bird, driving away all others from the part of the tree on which it is feeding; the food consists of honey and insects extracted from the blossoms of the banksias, which are in flower for the greater part of the year; as these trees are found only where the land is poor, the presence of this bird tells the colonist the nature of the soil. The nest is made of twigs in a low bush, and lined with wool and fine grasses. The male utters a peculiar harsh note, which has been compared to the sounds made by a person vomiting, and has been imitated in the native name *goo-gwar-ruck*, applied also to other species of the genus.

WATTS, Alaric Alexander, an English journalist and poet, born in London, March 16, 1799. After teaching for some time in the school of his brother at Putney, he became before he was 15 years old an assistant to George Crabbe, the author of the "Technological Dictionary," and afterward a private tutor in Manchester. In 1822 appeared his first volume, entitled "Poetical Sketches," which rapidly ran through 5 editions; and shortly afterward he assumed the editorship of the "Leeds Intelligencer," in which he strongly attacked the inhumanity of the factory system. Three years later he resigned this post for the purpose of establishing the "Manchester Courier," but early in 1825 disposed of his interest in that journal and went to London. While in Leeds he embraced a proposal of the London publishers, Messrs. Hurst and Robinson, to edit an annual volume containing prose and poetical sketches by popular living writers, illustrated by engravings taken from the works of eminent British painters. In 1824 the first volume of "The Literary Souvenir" was published; it met with great success, was continued annually until 1834, and of some volumes 14,000 or 15,000 copies were sold. In 1835 it was succeeded by "The Cabinet of Modern Art," under his editorship, which lasted only 3 years. In 1827 he was engaged on the London "Standard" newspaper, and in 1828 published "The Poetical Album, or Register of Modern Fugitive Poetry," intended to be an annual, but it lived only two years. In 1833 he founded "The United Service Gazette," a journal devoted to the interests of the army and navy, of which he was editor and manager for 10 years; but in 1843 he became involved in a quarrel with his partner, which terminated in a chancery suit, out of which grew 5 more, effectually stripping him of all the money he had made by his 10 years' labor. From 1841 to 1847 he was again engaged on the London "Standard," but in the latter year withdrew altogether from any connection with the press. In 1851 appeared an edition of his select poetical writings under the title of "Lyrics of the Heart, with other Poems." Several of these were by his wife, who was a sister of Wiffen, the translator of Tasso, and who in addition has written and edited a number of volumes for young people. Since that time Mr. Watts has published only occasional poems. In 1853 a pension of £100 per annum was conferred upon him "in consideration of services rendered by him to literature and the fine arts."

WATTS, George Frederic, an English painter, born in London in 1818. He began to exhibit in 1837, but first brought himself into notice by his cartoon of "Caractacus," which obtained a first class prize at the Westminster hall competition in 1843. Subsequently his two colossal oil pictures, "Echo" and "Alfred inciting the Saxons to Maritime Enterprise," received a prize of £500, and were purchased for the new houses of parliament. Among his remaining oil pictures are "Paolo and Francesca," "Orlando pursuing the Fata Morgana," and "Life's Illusions." He has also painted in fresco for the new houses of parliament "St. George overcoming the Dragon," and after several years' labor completed in 1861 in Lincoln's Inn hall a large design in fresco representing the great lawgivers of all races and times.

WATTS, Isaac, D.D., an English dissenting clergyman and poet, born in Southampton, July 17, 1674, died in London, Nov. 25, 1748. He was educated by his father, who kept a boarding school at Southampton, and then at a dissenting academy in London under the Rev. Thomas Rowe, became in 1696 tutor to the son of Sir John Hartopp at Stoke-Newington, was chosen in 1698 assistant minister to the Rev. Isaac Chauncey of an Independent congregation then meeting in Mark lane, London, of which he became pastor in 1702, and remained in that post till his death. His health suffering, he obtained an assistant in 1703, and in 1712 went to live with Sir Thomas Abney, a London alderman, in whose family he remained as a guest throughout the rest of his life, a period of 36 years. During this time he preached occasionally, but devoted himself chiefly to study and composition. His "Logic, or the Right Use of Reason" (London, 1724), and his "Improvement of the Mind" (1727), based on the philosophy of John Locke, are the best known of his prose writings, though he also published a work on astronomy and geography, several volumes of sermons, and various theological treatises, of which his "Three Dissertations relating to the Christian Doctrine of the Trinity" is perhaps the most familiar to the general reader. But his "Hymns and Spiritual Songs" (London, 1707), "Psalms of David imitated in the Language of the New Testament" (12mo., 1719), and "Divine Songs attempted in easy Language for the Use of Children" (1726) count their admirers wherever the English tongue is spoken. Probably no poetry in the language has been more widely read or more warmly prized. No compiler of sacred lyrics can omit Watts from his selections, and no Protestant English worship is anywhere conducted without sometimes singing his pieces. The first complete collection of his works was published by Drs. Jennings and Doddridge (6 vols. 4to., London, 1754). His biography by Dr. Johnson is included in the "Lives of the Poets." His *Horæ Lyricæ* were republished in 1837, with a memoir by Southey; and of his psalms and hymns the editions are innumerable; indeed, it has been estimated that 50,000 copies of them are sold yearly in England and America. Dr. Watts lived and died a bachelor. In person he was small, his stature, according to Dr. Johnson, scarcely exceeding 5 feet. "In the pulpit," says the same writer, "the gravity and propriety of his utterance made his discourses very efficacious." In the latter part of his life his sermons were preached extemporaneously, only the heads being noted down beforehand.

WAUKEGAN (formerly Littlefort), a city and the capital of Lake co., Ill., on the W. shore of Lake Michigan, and on the line of the Chicago and Milwaukee railroad, 35 m. N. by W. from Chicago, and 50 m. S. from Milwaukee; pop. in 1860, 3,441. The city is principally built on a bluff rising near the lake shore abruptly to the height of about 50 feet, which gives a beautiful view of the lake. Between the bluff and the lake shore is a level tract, about 400 yards wide, occupied with dwellings, gardens, and some warehouses. It is a place of active trade by lake and railroad, especially in produce, wool, and timber. There were in 1862, 6 churches, 2 academies, a newspaper office, 2 steam flouring mills, and a bank.

WAUKESHA, a S. E. co. of Wisconsin, drained by Fox and Bark rivers; area, 576 sq. m.; pop. in 1860, 26,849. It has a level surface, diversified with prairie and woodland and numerous small lakes. The soil is extremely fertile. The productions in 1850 were 312,658 bushels of wheat, 77,097 of Indian corn, 248,392 of oats, 119,154 of potatoes, and 317,649 lbs. of butter. There were 16 grist mills, 26 saw mills, 19 churches, and 5,453 pupils attending public schools. Blue limestone of an excellent quality for building purposes is found. The county is intersected by the Milwaukee and Mississippi and the Milwaukee and La Crosse railroads.—Waukesha, the capital, is beautifully situated on the Fox river, 18 m. W. from Milwaukee; pop. in 1860, 2,073. It is the seat of Carroll college, and contains several factories, 2 newspaper offices, 7 or 8 churches, an academy, and excellent public schools. It is connected with Milwaukee by the Milwaukee and Mississippi railroad.

WAUPACCA, a central co. of Wisconsin, intersected by the Waupacca and Embarras rivers and their branches; area, 720 sq. m.; pop. in 1860, 8,855. The surface is undulating, and the greater portion covered with dense forests of valuable timber. The soil is very fertile. Immense quantities of lumber are exported. Wewauwegan lake is in the S. part. The county was organized in 1851. Capital, Muckwa.

WAUSHARA, a central co. of Wisconsin, drained by Fox, White, and Pine rivers; area, 648 sq. m.; pop. in 1860, 8,772. The surface is undulating and partly covered with a heavy growth of good timber, much of which is exported. The soil is fertile. The county was organized in 1852. Capital, Wautoma.

WAVE. See TIDES.

WAX, an organic product of both animal and vegetable origin, and occurring even as a mineral, though in this case also its original source is undoubtedly vegetable. The common properties of the substances included under this name are fusibility at a moderate heat; burning with much flame; insolubility in water, and solubility in alkaline solutions, alcohol, and ether; and in most cases a peculiar lustre, to which the name of "waxy" has been given. The most important of these substances is beeswax, which was for a long time supposed to be simply collected by the bees from flowers, but has been proved by the experiments of Huber and the Hunters to be secreted by them. (See BEE.) It is obtained in the cakes in which it appears in commerce, by boiling the combs, from which the honey has drained or has been pressed out, in water, with frequent stirring, that the wax may not burn. When completely melted, the wax is strained by pressure through hair bags, and received in a vessel of cold water, which serves to cool it and prevent it from sticking. This is repeated 2 or 3 times, the bags increasing in fineness, and the wax is finally melted without water, and poured into moulds wider at the top than at the bottom, and wetted to prevent sticking. After being filled, the moulds are kept in a warm room till the wax has solidified, as otherwise the cakes are apt to crack in the middle. This process is however tedious and somewhat wasteful, and various attempts have been made to find a more expeditious one, of which Mr. Bagster's appears the most simple. The combs are placed in a conical earthen vessel filled with a mixture of one ounce of nitric acid to a quart of water. This is set over an open fire, and stirred till the wax is completely melted, when it is removed from the fire, and allowed to cool gradually. The product is divided into 3 layers, the upper one pure wax, the lowest chiefly impurities, and the middle containing sufficient wax to be added to the next melting. A marketable wax is thus obtained at a single operation, without straining or pressing. Beeswax obtained by either of these processes is yellow; has an agreeable, somewhat aromatic odor, and a slight but peculiar taste; is rather soft and unctuous, though firm; has a granular fracture, but when cut shows the characteristic waxy lustre; does not adhere to the fingers or to the teeth when chewed; is rendered soft and tenacious by a moderate heat; melts at about 142° F.; and has a specific gravity of 0.960 to 0.965. It is often adulterated with earth, meal, rosin, &c. The first two render it brittle and grayish, and may be detected and separated by melting the wax, when the impurities may be strained out. Rosin makes the fracture smooth and shining instead of granular, and may be dissolved in cold alcohol while the wax remains untouched. Tallow or suet renders the wax softer, and gives it an unpleasant odor when melted.—Wax is bleached by causing it when melted to pass through a perforated trough upon the surface of revolving wooden cylinders half immersed in water, by which it is formed into films, which are then placed on webs of canvas raised from the ground, and exposed to the action of the weather until perfectly white. It is, however, generally necessary to repeat the process so as to expose fresh surfaces, before the wax can be completely bleached; and care must be taken to finally remove the wax from the webs of canvas only in dry weather, as if it is done in damp weather it retains a grayish tint, which much impairs its value. The films are finally melted and cast into thin circular cakes, known commercially as "virgin wax." When bleached by means of chlorine or its compounds, the color is destroyed, but the wax is rendered unfit for many purposes, and especially for candles. Another method of bleaching is to add to 1 lb. of melted wax 2 oz. pulverized nitrate of soda, and then stir in by degrees a mixture of 1 oz. sulphuric acid and 9 oz. water. When all the acid is added, it is allowed to partially cool, and the vessel is then filled up with boiling water and allowed to cool slowly. The wax when cold is put into boiling water, to remove the sulphate of soda and acid; it is then quite white, and should be perfectly freed from nitric acid, which tends to render it yellow. Well bleached wax is pure white, translucent in thin slices, shining, harder and less unctuous than the yellow, without taste or smell, becomes soft enough to be kneaded at 85° to 95° F., and fuses at 150° to 155° F., though it will remain liquid at a somewhat lower temperature; by a great heat it is partly volatilized and partly decomposed, the vapor burning with a clear bright flame; it is insoluble in water, but slightly soluble in boiling alcohol and ether, which deposit most of it on cooling; easily so in the essential and fixed oils; and can readily be combined with rosin by fusion. It is very frequently adulterated with spermaceti, which destroys its peculiar lustre and renders it softer and more fusible; it is also adulterated with stearine, which may be detected by the odor of fat or tallow evolved when the wax is highly heated, and by the crumbly texture which it imparts.—White wax is composed of two principal substances: myricine, which is grayish white, without crystalline texture, fusible at 137° F., and almost insoluble in boiling alcohol; and cerine, or cerotic acid, which crystallizes when pure in delicate needle-like crystals, fuses at 172°F., is much more soluble, constitutes about 22 per cent. of the entire weight of the wax, and has for its formula $C_{54} H_{54} O_4$. Wax also contains 4 or 5 per cent. of a substance called ceroleine, which is soft, very soluble in cold alcohol and ether, and melts at 83° F.; and by dry distillation, and by the action of acids and alkalies on cerine and myricine, a large number of peculiar organic compounds may be derived from it. A specimen of beeswax from Ceylon was found by Mr. Brodie to consist almost exclusively of myricine.—Beeswax, though produced in almost every country in the temperate and tropic zones, is an article of foreign commerce in comparatively few. The European supply is principally derived from the Baltic, the Levant, Africa, India, and the United States. The Portuguese province of Angola in Africa annually sends to Europe about 1,500,000 arrobas, or 48,772,000 lbs. Japan also exports much. In the United States it has long been an important article of production and export. The census for 1840 gives the value of the product at $628,303, which would be about 2,000,000 lbs.; that for 1850 states the product of wax and honey to have been 14,853,790 lbs., worth $2,376,606; and that for 1860 gives 1,357,864 lbs. of wax alone. The exports in 1859–'60 were 362,474 lbs., worth $131,803. In 1861, 238,553 lbs. were exported from New York. In 1860 more than five sixths of the exports were to France, England, and Brazil.—Beside beeswax, two kinds of wax of animal origin enter into commerce. The first, the insect wax of China, is found coating the surface of the *rhus succedaneum* and some other trees. It is the product of a very small white hemipterous insect (*coccus Sinensis*), which about the beginning of June climbs up the plant and feeds upon it, depositing the wax upon the branches as a coating which resembles hoar frost. This is scraped off toward the end of August, melted in boiling water, and strained through a cloth. It is white and crystalline, resembling spermaceti, but harder, more brittle, and more fibrous, fuses at 181° F., is but slightly soluble in alcohol or ether, dissolves readily in naphtha, and has for its formula $C_{108} H_{108} O_4$. It does not contain cerotic acid ready formed, but by fusion with potash is decomposed into a mixture of it with a substance called cerotine ($C_{54} H_{56} O_2$). The Chinese call it *fe-la*, and employ it for making candles, sometimes alone, but more commonly mixed with softer fats and as a coating for other more easily fusible material, in order to prevent guttering. It is often colored red with alkanet root or green with verdigris. It has been introduced into England for the manufacture of composite candles, and is found to answer the same purpose as beeswax, of destroying the crystalline structure, or "breaking the grain," of stearic acid. In China it is also employed as a medicine. The French have introduced the insect into Algeria. The price of the wax at Ningpo some years ago was 22 to 25 cents per pound, and the annual production was estimated at 400,000 lbs. Another wax of animal origin is the Andaquies wax of South America, which is produced by a small insect called *avesa*. It melts at 171° F., has a specific gravity of 0.917, and according to M. Lewy contains 50 per cent. of ceroxyline or palm wax, 45 per cent. of cerosine or sugar cane wax, and 5 per cent. of an oily substance.—Of the vegetable waxes, the Japanese, the palm wax of New Granada, and the myrtle wax of the United States are the principal varieties. The first is as white as bleached beeswax, more brittle, less ductile, and breaks with a smoother and more conchoidal fracture; its specific gravity is rather less; and its melting point is about 127°. Its chemical composition is not definitely known. The berries yielding it grow in clusters like grapes on trees from 15 to 25 feet high, and when gathered are roughly washed and boiled in water, when the wax rises to the surface, is skimmed off, and formed into cakes weighing about 30 lbs. It is said to require protracted bleaching before it is fit for market. Small quantities have been shipped to Europe for many years past, but it is only within 4 or 5 years that it has been extensively employed for candles, &c. The amount exported is large, and continually increasing. In 1859 a single cargo of 1,170,000 lbs. arrived in England. In 1860 the price at Nagasaki was $11 to $12 per pecul (8½ to 9¼ cents per lb.), while that of beeswax was $32 (24½ cents per lb.). The palm wax of New Granada (ceroxyline) is obtained from the *ceroxylon andicola*. The scrapings from the exterior of the tree are boiled by the Indians, and the wax rises to the surface. It is grayish white when crude, and after purification by digestion in alcohol is yellowish white, almost insoluble in alcohol, and fuses at 161½° F. The tree has been introduced into Algeria. Carnauba wax is derived from a palm growing in northern Brazil. It is soluble in alcohol and ether, and fuses at 182° F. The Ocuba wax of Brazil is derived from the kernels of the fruit of several species of *myristica*, especially the *M. Ocuba*. It is yellowish white, soluble in boiling alcohol, and melts at 98° F. The Bicuhiba wax, also from Brazil, comes from the *M. Bicuhiba*, is yellowish white, soluble in boiling alcohol, and fusible at 95° F. The myrtle wax, which for many years has been an article of commerce in the United States, also known as "candleberry wax" and "bayberry tallow," occurs as an incrustation on the berries of the wax myrtle or bayberry. (See WAX MYRTLE.) The berries are enclosed in bags of coarse cloth, and kept immersed in boiling water until the wax collects on the surface, which is then cast into moulds and sold without further preparation. It varies in color from grayish yellow to deep green, has a balsamic and slightly aromatic odor, a specific gravity of 1.004 to 1.006, fuses between 117° and 120° F., and is much harder and more brittle than beeswax. It is composed, according to Mr. G. E. Moore ("American Journal of Science," May, 1862), of one fifth part of a substance called palmitine, which exists in palm oil, Japanese wax, &c., and four fifths of palmitic acid ($C_{32} H_{31} O_3 HO$), with a small quantity of lauric acid. This wax appears as a candle-making material to be worthy of more attention than it has hitherto received. Its illuminating power is scarcely inferior to that of the best beeswax; it costs hardly one quarter as much, can be obtained more free from color, is easily bleached, and from its superior hardness can be cast instead of being moulded by hand like beeswax. The plant grows abundantly upon the poorest soils along the coast of New England. Plantations of it have long existed in Europe, and its cultivation has lately been tried in Algeria. The berries of *myrica quercifolia*, natives of the Cape of Good Hope, growing on dry sandy plains along the coast, also yield a greenish wax, which can be bleached, and when made into candles gives a very fine light. The sugar cane yields a wax called cerosine, having for formula $C_{48} H_{48} O_2$, which is soluble in boiling alcohol and slightly so in boiling ether. The sorghum also secretes on the surface of the native stalks a white resinous powder, from which candles could be made. A waxy substance called suberine has likewise been obtained from cork.—Several mineral substances resemble wax in physical properties and composition, the principal of which are ozocerite and hatchettine.—The principal uses of the different kinds of wax are: 1, for the manufacture of candles, either of pure wax, the consumption of which is especially great in Roman Catholic countries, or of wax mixed with stearic acid, palm oil, &c., as in composite candles; to which purpose every variety, whether animal, vegetable, or mineral, seems to have been applied in different countries (see Candle); 2, as a vehicle for colors in certain kinds of painting, and as a protecting coating for them (see Encaustic, and Varnish); 3, for giving a polish to furniture or floors, for both which purposes it is generally used in France and other parts of southern Europe (see French Polish); 4, in medicine, in which beeswax is employed as an internal remedy against diarrhœa and dysentery, as an ingredient in almost all ointments, cerates, and plasters, and also for filling carious teeth; 5, as a lute or cement of much utility for chemical and other purposes, and also as an impervious coating for vessels formed of porous materials; 6, as a material for modelling; and 7, formerly for seals instead of sealing wax. (See Seal.)

WAX, Sealing. See Sealing Wax.

WAX FIGURES. The employment of wax in imitative art dates from a period anterior to historical times, although, according to Pliny, the art of casting it in moulds was not practised previous to the time of Lysistratus, its reputed inventor, who flourished about 300 B. C., and whose productions were chiefly portraits cast in plaster moulds taken from the face. Wax portraits eventually became common, and among the Romans, who placed them in the vestibules of their houses, were regarded as an evidence of ancient nobility, as none were allowed to possess such images whose families had not borne some curule magistracy; whence the term *fumosæ imaginis*, indicating the antiquity of a family. Polybius relates that these images, habited in the costume appropriate to their age and rank, were carried in funeral processions, or seated in chairs in the forum, where they afforded an impressive spectacle to the populace and a suggestive theme to the orator of the occasion. In the middle ages, wax was employed in the construction of images of saints and of votive images, and those who practised sorcery melted before a slow fire wax figures of the persons against whom their incantations were directed. In the latter half of the 15th century Andrea del Verrocchio and Orsino gained considerable reputation by some figures of Lorenzo de' Medici, their joint production, which consisted of frameworks of wood or skeletons for the bodies and limbs, while the heads, hands, and feet were cast in wax, painted in oil colors to counterfeit life. They were furnished with glass eyes and natural hair, and were habited in the costume usually worn by Lorenzo. Vasari speaks of the life-like appearance of these figures, and adds that the art declined rapidly after the time of Orsino. The manufacture of wax figures of the size of life is still carried on to a considerable extent, but has long ceased to be considered a branch of the fine arts, no imitative skill or taste on the part of the artist being sufficient to overcome the ghastly fixedness which such images must always present, and which is the more disagreeable as the resemblance to life is closer. In the preparation of anatomical models and pathological examples, however, wax has been very advantageously employed, the invention being due to Gaetano Giulio Zummo, a famous modeller in colored wax, who flourished in the latter half of the 17th century. In the succeeding century the celebrated collection of anatomical models in the institute of Bologna was commenced under the direction of Ercole Lelli, the finest specimens being by Giovanni Manzoli and his wife Anna Morandi Manzoli. In the museum of natural history at Florence are 15 chambers devoted to preparations by Fontana, Susini, and other celebrated modellers; the Musée Dupuytren at Paris is famous for its morbid specimens; and almost every considerable city of Europe now has its collection.—In the manufacture of wax models of this class, it is usual to take a mould of the object to be imitated in plaster of Paris; or, which is better, in a flexible composition of beeswax, Burgundy pitch, and Venice turpentine, with a very small quantity of olive oil; or in gelatine, which, if made thin, can be peeled off the cast in pieces without injury to it. The model, when cast, receives its local tints by means of a hair pencil and powder colors moistened with turpentine, or sometimes with water, and tempered with a little wax. This same process is employed in modelling fruit, and generally in making images, although various expedients have been devised to save wax, such as casting the pure wax thin and filling in to a considerable thickness with a coarser composition. A common method of making heads is to fashion a block head of paper pulp and size into the desired shape, color it in a higher degree than is natural, and pour over it a thin coating of wax, to which a uniform surface can be communicated by means of a hot iron held near the image. The color painted on the paper block shows through the wax in tints subdued to those of nature. Flowers are not cast, but are made from thin leaves of colored wax, receiving their local tints by means of a pencil.

WAX MYRTLE, or BAYBERRY (*myrica cerifera*, Linn.), a low, crooked shrub, 3 to 8 feet high, growing in extensive patches or in thick clusters on every variety of soil, usually near the sea coast, throughout the United States. The wax myrtle is typical of the natural order *myricaceæ* of Lindley, related to the birches, but distinguished chiefly by the 1-celled ovary, with a single erect, straight ovule, and the drupe-like nut. This order embraces 3 or 4 genera, shrubs or small trees covered with resinous dots and glands, and alternate, simple leaves with or without stipules, indigenous to North and South America, the Cape of Good Hope, and India. Their flowers are diœcious, amentacious, naked; the stamens 2 to 8, generally in the axil of a scaly bract; anthers 2 to 4-celled, opening lengthwise; ovary 1-celled, ovule solitary; stigmas 2, subulate or else petaloid; fruit drupaceous; seeds solitary, erect, the embryo exalbuminous. The bayberry or wax myrtle has an irregular, crooked, seldom erect stem, which gives off rough branches in clusters, the bark brownish gray, sprinkled with round or oblong white dots; the leaves irregularly scattered, often in tufts, nearly sessile, obovate lance-shaped, abruptly pointed, cuneate at base, wavy, slightly serrate and revolute at the edge, yellowish beneath. The flowers appear in April and May, the barren ones in short, stiff, erect catkins, having loose, rhomboidal scales containing each 3 or 4 stamens; the fertile flowers are much smaller and occur on a different plant, the scales imbricated, oval, pointed, each containing an ovary with 2 subulate stigmas. The fertile ament ripens into a branch of 4 to 9 dry berries, which are covered with rounded waxy particles, giving out, as well as the entire plant, a fragrant and balsamic odor. This species is especially prized for its wax (see WAX), but seems to be held in more esteem in Europe than in America; and in certain parts of France, where it has been introduced for many years, it has become perfectly acclimated. Other species of *myrica* are known as the fragrant gales, of which a familiar example is *M. gale* (Linn.), a dark-colored bush 2 to 5 feet high, having wedge or lance-shaped, scarcely serrated, fragrant leaves, and stiff brown-scaled aments appearing in April, and found in inundated places. A southern spieces (*M. inodora*, Bartram), a shrub with whitish bark and perennial, coriaceous, oblong, obtuse, entire leaves, sparingly dotted, is found on the margins of swamps near the sea coast of Florida. The sweet fern (*Comptonia asplenifolia*, Aiton), a very common plant in old and neglected pastures throughout the United States, also belongs to the order *myricaceæ*.—The medicinal qualities of the order are astringent and tonic, as in the sweet fern, which is employed in diarrhœa, while in its aromatic bark reside both benzoic and tannic acids combined with a resinous matter. The roots of the wax myrtle are reputed emetic and drastic, and the berries of other species produce wax; the drupe of a Nepaul species (*M. sapida*) is acid, of the size of a cherry, and eaten in that country. The sweet gale (*M. gale*) has been used as a vermifuge, and its leaves employed in brewing; it affords a yellow dye, and its stems and branches are used in tanning.

WAXBILL. See FINCH.

WAXWING, a name applied to birds of the genus *ampelis* (Linn.) or *bombycilla* (Vieill.), derived from the appendages at the ends of some of the secondaries and tertiaries, which in color and texture resemble small pieces of red sealing wax; these are horny expansions of the shafts, and are found in both sexes. This group, which embraces two North American species, has by some been placed among the chatterers; Cabanis makes them a subfamily of the flycatchers, and Baird elevates them into a family (*bombycillidæ*), coming near the shrikes in the notch of the lower mandible. The gape is very wide, but without bristles; bill short, broad at the base, compressed, and notched at the tip in both mandibles; wings long, broad, and pointed, with 10 primaries, the 1st rudimentary and the 2d the longest; tail short and even; tarsi short, toes long, and claws curved and sharp. Unlike the chatterers, they are silent birds, and are found only in cold regions. The Bohemian waxwing or chatterer (*A. garrulus*, Linn.) is a handsome bird, about 8 inches long and 12½ in alar extent; the color is a general reddish gray, with a large patch on the throat and band on forehead black; crest and lower tail coverts brownish orange; primaries, secondaries, and tail tipped with yellow; 2 white bands on the wings; lower parts silvery gray. It is found in the extreme northern portions of America, Europe, and Asia, migrating to temperate latitudes in winter, being most common in the United States about the great lakes and the valley of the northern Mississippi; the epithet Bohemian is a misnomer, as they are no more abundant in Bohemia than in the more northern parts of Europe; they live principally and breed within the arctic circle. The food consists of berries of all kinds, especially of the mountain ash, hawthorn, ivy, and juniper; and they occasionally take insects, after the manner of the flycatchers. The cedar bird (*A. Carolinensis*, Briss.; *bombycilla cedrorum*, Vieill.) is considerably smaller, more southern, and less migratory. The general color is reddish olive, passing into purplish cinnamon anteriorly, ashy behind, and yellow below; chin black; under tail coverts white, but no white on the wings; in other respects like the preceding species. It occurs throughout North America, from Canada to Central America; it is seen usually in flocks, flying high and rapidly; the food consists of berries and small fruits of all kinds, which it eats to repletion and sometimes to its destruction; it takes its name from its fondness for the berries of the red cedar; it also eats insects. It is a handsome and sprightly bird, but has no song; it gets very fat in summer and autumn, and is then highly esteemed as food in the southern states. It breeds in June, making a nest of grass in orchard and cedar trees; the eggs are 3 or 4, purplish white with black spots. There is a species in Japan, which has no red appendages to the wings.

WAY, Right of. See Realty, vol. xiii. p. 785.

WAYLAND, Francis, D.D., an American clergyman, born in the city of New York, March 11, 1796. His parents were natives of Great Britain, and his father a clergyman of considerable distinction. He was graduated at Union college in 1813, studied medicine under Dr. Eli Burritt of Troy, and was licensed to practise. In 1816 he joined the Baptist church in Troy, and soon after entered the Andover theological seminary. In 1817 he accepted a tutorship in Union college, which he held for 4 years, prosecuting his theological studies meanwhile under the informal instruction of President Nott. In 1821 he was called to the pastorate of the first Baptist church in Boston, where he was ordained and remained 5 years. In Sept. 1826, he was elected professor of mathematics and natural philosophy in Union college; but in December of the same year he was chosen president of Brown university, Providence, R. I., and was inaugurated in Feb. 1827. The university was not prosperous at the time of his election to the presidency, but it revived under his administration. He commenced a careful investigation of the subject of the existing system of collegiate instruction, and gave to the public some of the results of his inquiries in his "Thoughts on the Collegiate System of the United States" (Boston, 1842). The fundamental principle of this work was, that, borrowing our system of collegiate education from that of Great Britain, and changing for the worse some of its best features, we had provided only the kind of education demanded by those who were intending to enter one or other of the learned professions, to the almost total exclusion of the commercial, mechanical, and agricultural classes, which had done most for the organization and endowment of colleges; and that to offer to those classes the advantages of such an education as would be best adapted to their wants, the study of the classics should be made optional to those desiring an education for other than professional purposes, and those who chose to take only a practical course should be allowed college honors expressive of their attainments. In 1849 he resigned the presidency of the university, but consented to retain it on the condition that the institution should be reorganized on the plan above indicated. This was accordingly done, and $125,000 raised to effect the proposed changes. He finally retired in 1855, and has since been engaged for the most part in literary labors, acting also for two or three years as pastor of the first Baptist church in Providence. Beside the one above mentioned, the following are his principal published works: "Elements of Moral Science" (12mo., Boston, 1835; abridged for the use of schools, 18mo., 1836); "Elements of Political Economy" (1837); "University Sermons" (1838), subsequently enlarged and published under the title of "Salvation by Christ" (1858); "Limitations of Human Responsibility" (1840); "Life of Rev. Adoniram Judson, D.D." (2 vols. 12mo., 1853); "Intellectual Philosophy" (1854); "Notes on the Principles and Practices of Baptists" (New York, 1856); "Occasional Discourses" (1858); and "Sermons to the Churches" (1858). A correspondence on the subject of slavery between Dr. Wayland and the Rev. Richard Fuller, D.D., was published under the title of "Christianity and Slavery" (New York, 1845). In this correspondence Dr. Wayland advocated opinions of thorough hostility to slavery.

WAYNE, the name of counties in 14 of the United States. I. A N. W. co. of N. Y., bordering on Lake Ontario, and intersected by Clyde river; area, 572 sq. m.; pop. in 1860, 47,762. The surface is undulating and the soil fertile. The productions in 1855 were 285,161 bushels of wheat, 875,624 of oats, 756,677 of Indian corn, 229,495 of barley, 261,403 of potatoes, 509,626 of apples, 295,819 lbs. of wool, 1,446,080 of butter, 163,763 of cheese, and 45,271 tons of hay. There were 25 grist mills, 85 saw mills, 10 iron furnaces, 3 founderies, 14 tanneries, 80 churches, 6 newspaper offices, and 17,222 pupils attending public schools. Iron ore, water limestone, and gypsum abound, and there are salt and sulphur springs. The county is intersected by the New York central railroad and the Erie canal. Capital, Lyons. II. A N. E. co. of Penn., bordering on N. Y. and bounded E. by the Delaware river, and drained by Lackawaxen and other creeks; area, 720 sq. m.; pop. in 1860, 32,279. The surface is mostly hilly, and in the W. part somewhat mountainous. The productions in 1850 were 50,577 bushels of Indian corn, 96,094 of oats, 130,338 of potatoes, 391,814 lbs. of butter, 28,928 of wool, and 25,380 tons of hay. There were 9 grist mills, 99 saw mills, 4 iron founderies, 10 tanneries, 32 churches, and 2 newspaper offices; and in 1860 there were 6,638 pupils attending public schools. Iron ore is found. The county is intersected by the Delaware and Hudson canal and railroad, and the Pennsylvania coal company's railroad. Capital, Honesdale. III. A W. co. of Va., separated from Ky. on the W. by Sandy river, and from Ohio on the N. by the Ohio river; area, 415 sq. m.; pop. in 1860, 6,747, of whom 143 were slaves. The surface is very hilly, and in most parts covered with forests. The productions in 1850 were 226,800 bushels of Indian corn, 27,785 of oats, and 36,555 lbs. of butter. There were 6 saw mills, 2 tanneries, 9 churches, and 203 pupils attending public schools. Bituminous coal and iron ore are abundant. The value of real estate in 1856 was $880,017, an increase of 43 per cent. since 1850. Capital, Wayne Court House. IV. An E. co. of N. C., intersected by the Neuse river; area, 720 sq. m.; pop. in 1860, 14,906, of whom 5,451 were slaves. The surface is generally level and the soil sandy. The productions in 1850 were 13,948 bushels of wheat, 480,240 of Indian corn, 20,709 of oats, 157,662 of sweet potatoes, 93,045 of peas and beans, and 335 bales of cotton. There were 49 grist mills, 4 saw mills, 51 tar and turpentine establishments, 10 turpentine distilleries, 23 churches, 2 newspaper offices, and 226 pupils attending schools. Extensive pine forests cover much of the county, and large quantities of lumber, tar, and turpentine are exported. The county is traversed by the North Carolina, Atlantic and North Carolina, and Weldon and Wilmington railroads. Capital, Goldsborough. V. A S. E. co. of Ga., bounded on the N. E. by the Altamaha river, and intersected by the Santilla river; area, 594 sq. m.; pop. in 1860, 2,269, of whom 621 were slaves. The surface is level, abounding with pine forests, and the soil sandy. The productions in 1850 were 21,545 bushels of Indian corn, 24,433 of sweet potatoes, 87 bales of cotton, and 41,180 lbs. of rice. There were 31 churches, and 55 pupils attending schools. The county is intersected by the Savannah, Albany, and gulf railroad. Capital, Waynesville. VI. A S. E. co. of Miss., bordering on Ala., intersected by the Chickasawha river, and by the Mobile and Ohio railroad; area, 790 sq. m.; pop. in 1860, 3,691, of whom 1,947 were slaves. The surface is undulating and the soil sandy. The productions in 1850 were 84,280 bushels of Indian corn, 37,605 of sweet potatoes, and 1,217 bales of cotton. Capital, Winchester. VII. A S. W. co. of Tenn., bordering on Ala., partly bounded on the W. by the Tennessee river, and drained by Buffalo river and several creeks; area, 504 sq. m.; pop. in 1860, 9,115, of whom 1,269 were slaves. The surface is hilly and the soil fertile. The productions in 1850 were 458,148 bushels of Indian corn, 41,070 of oats, and 47,912 lbs. of butter. There were 20 grist mills, 3 saw mills, 18 churches, and 825 pupils attending public schools. Iron ore is abundant. Capital, Waynesborough. VIII. A S. co. of Ky., bordering on Tenn., bounded N. by Cumberland river and E. by South fork; area, 570 sq. m.; pop. in 1860, 10,258, of whom 987 were slaves. The surface is hilly, and the soil, especially along the streams, very fertile. The productions in 1850 were 14,276 bushels of wheat, 495,409 of Indian corn, 104,498 of oats, 128,522 lbs. of butter, and 24,501 of wool. There were 19 grist mills, 3 saw mills, 16 churches, and 1,484 pupils attending public schools. Bituminous coal and iron ore are very abundant. Capital, Monticello. IX. A N. E. co. of Ohio, drained by a branch of the Walhonding river, and by Killbuck creek and other streams; area, 660 sq. m.; pop. in 1860, 32,483. The surface is undulating, and the soil a deep clayey loam of remarkable fertility. The productions in 1850 were 571,377 bushels of wheat, 827,460 of Indian corn, 427,319 of oats, 109,828 of potatoes, 1,027,923 lbs. of butter, 255,511 of wool, and 41,722 tons of hay. There were 37 grist mills, 56 saw mills, 3 iron founderies, 17 woollen factories, 25 tanneries, 70 churches, 2 newspaper offices, and 13,927 pupils attending public schools. Bituminous coal and limestone are very abundant. The county is intersected by the Pittsburg, Fort Wayne, and Chicago, and the Cleveland and Zanesville railroads. Capital, Wooster. X. A S. E. co. of Mich., bordering on Lakes Erie and St. Clair, bounded E. by Detroit river and S. W. by Huron river, and drained by Rouge and Huron rivers and their branches; area, 600 sq. m.; pop. in 1860, 75,548. The surface is undulating in the W. part and level in other portions, and the soil very fertile. The productions in 1850 were 106,876 bushels of wheat, 283,559 of Indian corn, 237,007 of oats, 130,442 of potatoes, 435,357 lbs. of butter, 95,058 of wool, and 28,187 tons of hay. There were 16 grist mills, 43 saw mills, 7 iron founderies, a woollen factory, 50 churches, 9 newspaper offices, and 7,183 pupils attending public schools. Limestone of a superior quality is found, and there are sulphur springs. The county is traversed by the Michigan central, Michigan southern and northern Indiana, and Detroit and Milwaukee railroads, which terminate at the capital, Detroit. XI. An E. co. of Ind., bordering on Ohio, and drained by Whitewater river and its tributaries; area, 420 sq. m.; pop. in 1860, 29,558. The surface is undulating and the soil extremely fertile. The productions in 1850 were 163,667 bushels of wheat, 1,398,455 of Indian corn, 207,295 of oats, 363,082 lbs. of butter, 71,659 of wool, and 11,377 tons of hay. There were 45 grist mills, 30 saw mills, 14 tanneries, 68 churches, 5 newspaper offices, and 3,467 pupils

attending public schools. The county is traversed by the Whitewater canal and the Indiana central and the Cincinnati and Chicago air-line railroads. Capital, Centreville. XII. A S. E. co. of Ill., intersected by the Little Wabash river and its affluent, Skillet fork; area, 720 sq. m.; pop. in 1860, 12,233. The surface is generally level, diversified by prairie and woodland, and the soil is fertile. The productions in 1850 were 6,342 bushels of wheat, 301,935 of Indian corn, 28,613 of oats, 28,129 lbs. of tobacco, and 458 tons of hay. There were 12 grist mills and 21 churches. Capital, Fairfield. XIII. A S. co. of Iowa, bordering on Mo., and drained by the South fork of the Chariton river; area, 510 sq. m.; pop. in 1860, 6,411. The surface is undulating and the soil very fertile. The productions in 1859 were 4,697 bushels of wheat, 312,609 of Indian corn, 120,630 lbs. of butter, 5,353 tons of hay, and 3,418 gallons of sorghum molasses. Capital, Corydon. XIV. A S. E. co. of Mo., intersected by the St. Francis, Big Blackwater, and Castor rivers; area, 946 sq. m.; pop. in 1860, 5,628, of whom 261 were slaves. The surface is undulating, and the soil in some parts fertile. The productions in 1850 were 10,072 bushels of wheat, 253,158 of Indian corn, and 21,678 of oats. There were 10 grist mills, 3 saw mills, 5 churches, and 250 pupils attending public schools. Timber is scarce. Mingo swamp extends into the S. E. border. Capital, Greenville.

WAYNE, Anthony, an American general in the revolutionary war, born at Waynesborough, Chester co., Penn., Jan. 1, 1745, died in the garrison at Presque Isle (Erie), Penn., Dec. 14, 1796. His grandfather, Anthony Wayne, a native of Yorkshire, England, removed early in life to Wicklow, Ireland, and commanded a squadron of dragoons under King William at the battle of the Boyne, and held for a time some civil offices. He emigrated to Pennsylvania in 1722. His son Isaac, the father of Anthony, was frequently a member of the provincial legislature, and served as an officer in several expeditions against the Indians. Anthony was educated at a school kept by his uncle, and at the Philadelphia academy, where he remained two years, devoting most of his time to his favorite studies of mathematics, mechanics, optics, and astronomy. At the age of 18 he returned to Chester county, and occupied himself as a surveyor. While thus employed he became acquainted with Dr. Franklin, and a strong friendship soon sprung up between them, which continued without interruption during their lives. Franklin procured him the appointment of agent of a Philadelphia association formed for the purchase and settlement of a large tract of land in Nova Scotia. He visited that province in 1765, and again in 1766, and continued to superintend the affairs of the company and colony until the following year, when he married a daughter of Bartholomew Penrose, an eminent merchant of Philadelphia, and established himself on a farm in his native county. He was elected within a few years to various county offices, and took an active part in the troubles between Great Britain and the colonies. In 1774 he was one of the provincial deputies who met in Philadelphia to deliberate upon the existing troubles, and was also a member of the Pennsylvania convention held that year for a similar purpose. In the same year he was elected a member of the legislature. In the summer of 1775 he was appointed a member of the committee of safety, with Dr. Franklin and others; but in September he relinquished all civil employment, and devoted his time to military drill and the study of tactics. In a few weeks he raised a regiment of volunteers, of which he was elected colonel, and in January following was commissioned by congress. Early in the spring he proceeded with his regiment —already one of the best disciplined in the service—to New York, and soon after was ordered to join Gen. Sullivan in Canada. At Three Rivers he first came in contact with the enemy, and in that disastrous engagement his intrepidity in attack and his skill in covering the retreat were equally conspicuous. On the withdrawal of the American army from Canada, the fortresses of Ticonderoga and Mount Independence became barriers of the highest importance against the pressure of British forces from the north, and were committed to his care, with a garrison composed of his own and 4 other regiments. He remained in charge of these posts until May, 1777, and was in the mean time promoted to the rank of brigadier-general. He then joined Gen. Washington in New Jersey, and assisted him in driving the enemy from that province. At the battle of Brandywine, Sept. 11, he commanded a division of the army, and was stationed at Chadd's ford to oppose the passage of the river by Howe's right wing under Knyphausen. He fought until near sunset, and retreated in time to escape being flanked by the enemy's left wing under Cornwallis, and conducted the retreat with so bold a front as to prevent serious interruption. Nine days after, while hanging on the rear of the British with 1,500 men and seeking an opportunity to cut off their baggage, he was suddenly attacked by superior numbers guided by American tories, and defeated near Paoli with some loss. The disaster was at Wayne's request made the subject of a court martial, by which he was found to have done every thing that could be expected of a brave and vigilant officer. At the battle of Germantown Gen. Wayne led the attack of the American right wing. During the ensuing winter, when the American army was suffering intensely at Valley Forge for want of provisions and other necessaries, Wayne was despatched to New Jersey, within the British lines, and was successful in capturing and carrying into camp several hundred head of fine cattle, together with horses suitable for cavalry service and a large quantity of forage. His bravery and skilful manœuvring at the battle of Monmouth contributed largely to the success of the American arms, and were specially commended in Washington's official report. On the night of July 15, 1779, Gen. Wayne surprised and took the strong fortification at Stony Point, on the Hudson, making the whole garrison prisoners. This was the most brilliant affair of the war, and for desperate daring has never been excelled. It occurred at a gloomy period in the struggle of the colonies, and animated afresh the drooping spirits of the continentals. Resolutions of thanks were passed by congress and by the legislature of Pennsylvania, and wherever Wayne appeared he was greeted with enthusiastic demonstrations of popular admiration. His services in the north were exceedingly valuable in 1779–'80; and in Jan. 1780, he displayed remarkable address and decision in the suppression of a mutiny which broke out at Morristown and threatened the most serious consequences to the revolutionary cause. In February of that year he was ordered to join the southern army, and at the battle of Green Spring, Va., July 6, 1780, by a prompt attack with a part of his brigade on the whole British army, he so disconcerted Cornwallis as to prevent a meditated manœuvre that would probably have been disastrous to the forces under Lafayette. He seconded the operations of Lafayette in Virginia, and aided in the capture of Cornwallis at Yorktown. Soon after that event he was assigned to the command in Georgia, and after routing large bodies of Indians on their way to reënforce the British, he succeeded in driving the enemy from the state. In acknowledgment of his services the legislature of Georgia passed him a vote of thanks and granted him a large and valuable tract of land. After the war he retired to his farm at Waynesborough, and also took measures for the improvement of his Georgia lands. He initiated the movement for the improvement of the navigation of the principal rivers of the state, and the connection of the waters of the Delaware and Chesapeake bay by canal. In April, 1792, after the defeat of Gens. Harmar and St. Clair, he was appointed major-general and commander-in-chief in the war against the western Indians; and he gained a signal victory over the Miamis in Aug. 1794, compelling them to sue for peace. He was shortly afterward appointed sole commissioner to treat with the Indians of the northwest, and to take possession of all forts held by the British in that territory. The ability, determination, and promptitude with which he managed affairs, impressed the hostile tribes with a dread which operated as a wholesome restraint upon them long after his death. He was taken ill and died while on his return. His remains were interred on the bank of Lake Erie, and in 1809 were removed by his son to the cemetery of Radnor church, near Waynesborough, where a handsome monument is erected to his memory. Gen. Wayne was one of the most brilliant officers of the revolutionary war, and brave to a fault, insomuch that he gained the *sobriquet* of "mad Anthony;" yet discreet and cautious, fruitful in expedients, quick in detecting the purpose of an enemy, instant in decision, and prompt in execution. In person he was rather above the medium height, his features were regular, and his face decidedly handsome. His dress was scrupulously neat and elegant, his movements were quick, and his manners easy and graceful.—A sketch of his life has been written by John Armstrong in Sparks's "American Biography."

WAYWODE (Slav. *voï* or *woy*, war, and *vodit* or *wodzic*, to lead), formerly the title of the military leaders in various Slavic countries. The army leaders were also governors of the provinces, and in Poland called out and took command of the general levies in time of war. In Russia the title was early given to high military officers, and in Muscovy it was also a civil as well as military title. The governors of Moldavia and Wallachia assumed the title of waywode, which they afterward exchanged for the Greek *despota*, and finally for the Slavic *hospodar*. The title waywode (Hun. *vajda*) was also in use in Hungary and Transylvania; and Voivodina (waywodeship) was the name of a division of Austria established by Francis Joseph, and lately abolished.

WEAK FISH, or SQUETEAGUE, a spiny-rayed fish of the genus *otolithus* (Cuv.), resembling the perch. It has no teeth on the vomer or palate bones, but numerous ones in the jaws, some having the form of elongated, hook-like canines; the head is convex, supported by cavernous bones; the air bladder has a horn on each side projecting forward. The common weak fish (*O. regalis*, Cuv.) is between 1 and 2 feet long, brownish blue above, with irregular brownish spots, and tinged with greenish and banded in the young; the sides silvery, abdomen white, and iris yellow; lower fins orange; no barbels on chin, and bones of anal fin weak; there is a single row of very small teeth in the upper jaw, and a double series in the lower; dorsals separated, and the 2d, with the caudal and anal, mostly covered with scales. This was formerly one of the most common marine fishes in Vineyard and Long Island sounds, but is now very rare there, driven away, it is believed, by the blue fish (*temnodon*); it has been taken in the gulf of St. Lawrence and the gulf of Mexico; it often accompanied the bass (*labrax*). It is called blue fish on the New Jersey coast, shecutts on the Long island shore, and trout in Philadelphia and Baltimore; the name weak fish originated from the little resistance it makes when taken, and from the ease with which the delicate structure of the mouth enables it to break away. On the New Jersey coast it appears early in the spring, being most abundant toward the end of July, and disappears late in the autumn; it is a greedy biter, and is easily taken by any soft white bait, affording great sport for about an hour on the flood tide; it swims in shoals near the surface, most of the fish being about ¾ of a pound in weight, and requires a line slightly, if at all, leaded. In summer it is abundant about the mouths of rivers, where the water is brackish, and sometimes ascends far up, having been taken in the Hudson above Sing Sing; it is taken by seines in the rivers in large quantities; when caught it makes a croaking sound, also heard when the fish is at the bottom. The flesh is wholesome and well flavored, but so quickly gets soft that it does not rank high in the market. The air bladder makes excellent isinglass for culinary purposes.

WEAKLEY, a N. W. co. of Tennessee, bordering on Kentucky, drained by tributaries of the Obion river; area, 680 sq. m.; pop. in 1860, 18,216, of whom 4,213 were slaves. The surface is nearly level, and the soil fertile. The productions in 1850 were 736,930 bushels of Indian corn, 77,454 of oats, 85,464 lbs. of butter, and 2,228,990 of tobacco. There were 15 grist mills, 12 saw mills, 9 churches, 2 newspaper offices, and 123 pupils attending schools. Capital, Dresden.

WEASEL, the general name of the carnivorous mammals of the family *mustelidæ*, including many genera approaching the cats in the bloodthirstiness of their disposition. Most of these have been described under Badger, Ermine, Ferret, Fisher, Glutton, Marten, Mink, Otter, Polecat, Ratel, Sable, and Skunk; indeed, most of the American weasels will be found under Ermine and Mink, the latter being the type of the genus *putorius* (Cuv.), since divided into 3 by Wagner. The head is short and rounded; the dental formula is: incisors $\frac{3-3}{3-3}$, canines $\frac{1-1}{1-1}$, premolars $\frac{3-3}{3-3}$, and molars $\frac{1-1}{2-2}=\frac{16}{18}$ or 34, being 1 premolar fewer on each side, above and below, than in the less carnivorous genus *mustela* (Linn.); ears short and round; feet 5-toed, with sharp claws; hair fine and soft. They are of small size, with elongated bodies and short legs, giving them a peculiar gliding serpentine motion; they are very active, preying on small quadrupeds and birds, and so eager for blood that they kill indiscriminately all the animals they can overpower, usually breaking in at once the skull of their victims; they are sometimes destructive among poultry, their slender form enabling them to penetrate through very narrow openings; when alarmed or irritated, they exhale a disagreeable odor. Our common or least weasel (*P. pusillus*, Aud. and Bach.) is only 6 inches long, with a tail of 1 inch, slender and not tufted nor tipped with black; it is dark brown above, the lower parts, inside of limbs, and upper lip white, this color extending high up on the sides; it becomes white, according to Richardson, in the fur countries during winter, but remains brown above all the year in the United States; it extends from New York and Minnesota northward. The common European weasel (*P. vulgaris*, Cuv.), *la belette* of the French, is 6 or 7 inches long, with a tail of 2 more; it is reddish brown above, the upper part of tail like back, but lower surface white; it is said to become all white in winter in the far north. It is found throughout temperate Europe, generally near the abode of man; it is very agile and bold, springing 5 or 6 feet high on to a tree, and jumping from branch to branch like a squirrel; it feeds upon moles, mice, and small birds, being rather beneficial than injurious to the farmer, making up for seizing an occasional chicken by destroying the mice in barns and granaries. It much resembles the preceding species, but is lighter colored and has a longer tail. The bridled weasel (*P. frenatus*, Aud. and Bach.) is about 11½ inches long, with a tail of 7½; it is chestnut brown above; nearly black on the head, with 3 white marks, one between the eyes and the others in front of each ear; yellowish white below, and tail tipped with black; ears moderately long, hairy on both sides, and eyes rather large. It is abundant about the Rio Grande in Texas, and in Mexico.

WEAVER BIRD, the common name of the finches of the family *ploceinæ*, so called from the remarkable manner in which they weave their nests from various vegetable substances, presenting some of the finest specimens of bird architecture. They have a strong bill, with the base projecting upon the forehead and the tip entire; wings rounded, with 1st quill very short; legs and feet stout, and hind toe long. Most are African, but a few of the genus *ploceus* (Cuv.) are found in the East Indies and the Indian archipelago; they feed on insects and seeds. Their skilfully woven nests are usually suspended from the end of a slender twig or palm leaf, frequently over the water and the aperture almost touching it; in this way they are placed beyond the reach of monkeys, snakes, lizards, and other climbing enemies; they are usually shaped like a pouch, from the side or bottom of which a tubular appendage is prolonged downward, the entrance being at the bottom. Some species attach their nests each year to the bottom of those of the preceding; the *ploceus pensilis* (Cuv.) in this way sometimes places 5 nests in succession below each other; this bird is greenish above, grayish below, with red vent, and black quills and tail. One of the East Indian species of *ploceus* is taught to perform tricks, such as firing off a cannon; on one side of the interior of its nest, a piece of clay is fixed on which, during the hatching season, it is said to place a glow-worm or firefly during the night. The social or republican weaver (*philetærus socius*, Gray) is about 6½ inches long, of a reddish brown color above and yellowish below; it inhabits the interior of S. Africa, building in large societies a compound nest on the mimosa trees, whose smooth trunk prevents the ascent of most noxious animals; the nests are made of a fine grass closely woven, and so arranged that 800 to 1,000, each with 3 or 4 eggs, are supported on a single tree, covered with a roof 10 to 12 feet in diameter; on the under surface of this umbrella-like, thatched roof, or, according to Paterson, around the edges and opening into a common passage, are numerous entrances to the nests, which are placed about 2 inches apart; they do not occupy the same nest for two years, but add on new nests to the lower surface of the old ones until the tree is broken down by the accumulated weight.—In this family belong the Whydah finches or widow birds, of the genus *vidua* (Cuv.); these are abundant about Whydah in W. Africa, whence the first name, which has been happily corrupted into the common English name, their sombre colors and long black trail well entitling them to the epithet widow birds, the *veuves* of the French and *vidua* of the Latin. In the paradise widow bird (*V. paradisea*, Cuv.) 2 of the middle tail feathers of the male in the breeding season are a foot long, and 2 others shorter but with broad webs, giving it a very graceful appearance; these fall off after the breeding season. The head, chin, fore neck, back, wings, and tail are black; neck all round orange of various shades, and most of the other parts white; it is about as large as a canary, and is a favorite cage bird both for its beauty and its song; it is found from Senegal to S. Africa.—The red-billed weaver (*textor erythrorhynchus*, A. Smith) is about 5 inches long, and the tail feathers 5 inches more; the general color above is glossy blue-black, with a white collar between the crown and back, and the lower parts white. It is an inhabitant of S. Africa, accompanying the herds of wild buffaloes, perching on their backs to rid them of parasitic insects, and also warning them of danger, the whole herd taking to flight at a signal from their vigilant attendants.—For descriptions and figures of this family, see vol. i. of Swainson's "Birds of Western Africa," being vol. ii. of the "Naturalist's Library" (Edinburgh, 1837).

WEAVING, the art of combining threads, filaments, or strips, of various nature or material, in the way of interlacing them to form cloth, or other web or woven fabric. This process is distinguished from platting by the preparatory form now usually given by spinning to the material to be employed in it, and in which many smaller filaments are so twisted together as to constitute thread or yarn; and also by the more common interlacement of the threads, in weaving, in directions crossing each other at right angles. From felting it is distinguished by the circumstance that while in that process the fibres are worked together irregularly and in all directions, in weaving the interlacement is always regular, one thread passing over and then under those transverse to it, alternately, or else passing over and then under certain numbers of threads, taken in definite succession.—The weaving of reeds, of thongs of hide, and of rude fibres was without doubt practised before the preparation of fibres for the loom by spinning had been conceived of. Though the Egyptian looms, as depicted on tombs at Thebes and elsewhere, were very simple, yet the fabrics produced in them were often of fine and costly character. In some of them the warp extended horizontally, as now; in others it was vertical, and the weft was driven upward. Specimens of the products of these looms remain in the mummy cloths, which were usually of linen, evenly spun, and bleached white; and in the most ancient of them the texture is close, firm, and elastic. Weaving was also practised in very early times in Greece, both as a domestic employment and as a distinct trade. Homer describes, as the product of Creüsa's shuttle, a figure-woven pattern, in which appeared a gorgon and dragons. Various accounts show that the Greeks understood the modes of "mounting a loom" so as to produce different sorts of diaper or twilled fabric; and it is undoubtedly true that the damasks, shawls, and tapestries woven by the later Greeks and by the Romans would rival in beauty some of the best productions of the modern art. Plato mentions one of the most important distinctions, as still required, between the threads of the warp and of the weft; namely, that the former are to be more strong and firm, in consequence of being harder twisted, while the latter should be comparatively soft and yielding. In more modern times, the people of Italy and of the Netherlands appear first to have become famed for their textile manufactures; and from these countries the trade passed to England and France, though just at what period is uncertain. Edward III., and afterward Elizabeth, are said to have laid the foundation for that prominence in textile manufactures for which England is yet distinguished.—In ordinary weaving, two distinct series or sets of threads or yarns, that traverse the web in directions at right angles to each other, are to be distinguished. The first is the series of threads running the whole length of the piece or web to be produced, and most commonly known as the warp; the second, most commonly named the weft or woof, is the series of threads crossing and interlacing with the warp, and which is in effect one continuous thread passing at one throw alternately over and under the warp threads from one side of the piece to the other, and at the return throw also alternately, but on the reverse sides of the same warp threads; and so on, from the beginning until the whole length of the warp threads becomes a woven piece or cloth. This ordinary mode is "plain weaving." In all styles of weaving, the warp threads are first affixed upon the proper parts of the loom; while the weft is wound in single threads on many small spools or bobbins, which are set one after another, as required, in a small hollowed and boat-shaped instrument, the shuttle; this, being thrown back and forth between the warp threads, parted as presently to be described, delivers the weft by its unwinding from the bobbin.—In plain, as in all other modes of weaving, it is necessary first to lay together in the loom the number of threads requisite to form the width of the cloth; this is called warping. Suppose the intended width and fineness require in the warp 600 threads; then sufficient yarn or thread from the large bobbins furnished by the spinners must be taken and laid out together in 600 lengths corresponding to that of the intended fabric. This was at one time done by use of a simple arrangement known as a warping frame. The more convenient "warping mill" was afterward introduced. This may be called a large vertical reel; the yarns from all the bobbins brought together are passed in a bundle through a movable "jack" or "heck box," and affixed at the top of the reel; turning the reel one way, the bundle of yarns is coiled down it by the gradual descent of the jack, let down by a string unwinding from the axis; when the right length is obtained, the yarns are turned about a pin fixed into a slat of the reel, and the reel itself is turned in the opposite direction, winding the yarns as the jack rises to the top; and these movements are repeated until the several bundles make the requisite number of threads. The jack is made during the same process to divide the yarns into two sets of alternate yarns, the lease, intended for the two heddles of the loom. The warper secures and distinguishes the lease by tying, cuts off at the proper lengths, and, laying all these side by side, winds them on a stick into a large ball. From this he unwinds them in "beaming," that is, disposing the threads by winding them on the warp beam of the loom; in doing this the threads are laid out as evenly as possible, by passing them between the teeth of a comb, or of an instrument known as a ravel or separator.—The frame of the ordinary hand loom consists of four upright posts joined by cross beams, at the middle, and at top and bottom. The centre beam, or cylinder, at the back of the loom, is the warp beam. The centre beam in front, just above the weaver's seat, is the cloth beam, on which the piece is to be wound. Just below the cloth beam, in front, is the breast beam, against which the weaver may lean in working. By a cross piece at top, with pulleys and cords, the two leaves of heddles or healds are suspended a little way back from the cloth beam; these being attached respectively to opposite ends of the same cords, and below to treadles on which the feet rest, the pressing down of either treadle depresses the leaf of heddles corresponding, and elevates the other. The leaves are light vertical frames, extending the width of the piece, each having ranged along it the heddles, or equidistant vertical twines, in number answering to half the required number of warp threads, and each twine having at the middle a loop or eye through which a warp thread is to be passed. The next operation, after beaming the yarn, is that of "drawing," in which the warp threads, already distinguished in two sets by the lease, are passed from the warp beam in their proper order through the loops of the respective heddles, from one side to the other, and attached forward along the cloth beam. Thus, every alternate yarn passes through a loop of one of the leaves of heddles, and the other half through those of the other. By this arrangement, at each depression of one treadle, the corresponding half of the threads is carried down, the other half of them raised; and between the cloth beam or edge of the cloth already woven in front, and the heddles behind, the parted sets of threads thus leave a triangular space or opening, called the shed, through which the weaver throws or otherwise drives the shuttle from side to side of the piece; after each passage of the shuttle, the other treadle being depressed, the position of the two series of threads is reversed before returning it; and thus the regular and alternate interlacement of the threads is secured. At the same time, just in front of the heddles, and back of the path of the shuttle, is suspended the batten, lay, or lathe, a movable frame having its axis at the top of the loom; the vertical rods forming its sides are the swords; its bottom is the shuttle race, the ends of which, just beyond the sides of the piece, are closed so as to form short troughs, in which the shuttle is arrested and started again at either side; while its middle portion is a sort of upright comb, the reed, having a tooth rising between every two consecutive threads. By seizing this batten and bringing it forward sharply after each thread of weft has been deposited, the weaver drives up the thread to its place in the cloth. In ordinary weaving, then, there are these three successive movements for every thread of the weft: 1, the weaver depresses one treadle, forming the shed; 2, into this he throws the shuttle, with force sufficient to carry it across the whole web; 3, he grasps and brings forward the batten, driving up the weft; the other treadle is then depressed, and the shuttle thrown from the other side, the like movements being continually repeated. However improved or complicated the loom, the principle of weaving is in all forms substantially that now described.—Before warping, the yarn is commonly sized, as by dipping sufficiently in size of starch, wringing and drying; and in weaving cotton or other yarns, these often require to be dressed as the weaver proceeds, being rubbed at intervals, as unrolled from the beam, with some mucilage or size, then brushed or combed, and dried by fanning; in this way the yarns are made more even, smooth, and tenacious. In warping, it is very important that the threads be so laid on the beam as to unwind with equal tension. To accomplish this, as well as the drawing, with the greatest economy and to the best advantage, two persons are required; and when the piece is to be very broad, and the instrument known as the ravel is employed for laying on the warp threads, the coöperation of several may be necessary. The due tension is given to the warp threads by means of a weight suspended from the outer side of the warp beam, and tending to turn it back, while it is held by the threads, and turned forward to unroll them as required, by winding the piece on the cloth beam. The leaves of heddles, especially for broad goods, may be suspended by levers, instead of simple pulleys, but acting in the like manner. For weaving broad goods, of 4, 6, or even 8 yards width, much dexterity and precision is requisite in the throwing of the shuttle with sufficient and not too much force; while for weaving narrow webs, such as ribbons, galloons, &c., a kind of loom called the engine loom has been devised, in which several shuttles work as many webs at the same time. It is only in the simplest mode of hand weaving that the shuttle is still thrown alternately by the two hands. About a century since, Mr. John Kay invented the fly shuttle; in this mode, a continuous firm cord has a wooden handle, or "picking peg," at its middle, and placed conveniently in front of the weaver; the ends of the cord act on "pickers," one in each trough or box at the ends of the shuttle race, these pickers lying beyond or outside the shuttle, and either one impelling it by being slidden along a horizontal wire at a jerk given with the picking peg to the cord in that direction; by this means the hand weaver moves the shuttle both ways with the right hand, while he manages the batten with the left.—The weaving of stripes, checks, and twills is the simplest form of pattern weaving, the more difficult being properly known as figure weaving. The simpler patterns and mixtures of thread are of great variety, and produced in various ways, a few only of which can here be specified. The warp may be of one material and the weft of another, as in satinets and many other fabrics; but by twilling, presently to be described, or otherwise, it may be secured that the weft thread and material only shall show, when of course no pattern appears. If all the warp threads are of one color, and all the weft of another, the effect is what is called a "shot" pattern. Stripes the length of the piece are simply secured by laying on the warp in the alternate colors, as required. Stripes across the piece are obtained by changing of shuttles, so as to employ the different colors or yarns as often as the proper widths of stripe are produced. This changing of shuttles was inconvenient and wasteful of time, until Robert Kay, son of the inventor of the fly shuttle, contrived the drop-box; in this, 2, 3, or more boxes, one over the other, at each side of the shuttle race, are so connected by a cord on which is a convenient handle, that, by moving this, one is made to slide down and the other up the swords of the batten; the boxes at one side have in them each a shuttle with one color of thread, and by moving them any required one is brought at once to the level of the shuttle race, so that its shuttle shall be next acted on by the picking peg and cord; and in this way the colors and stripes are changed at the will of the workman, or in power looms by some device changing the boxes at the proper intervals. Now when, by the required arrangements, stripes are thus caused to appear both in the warp and weft, the result is a check or plaid of some sort, the widths, colors, and succession of the bars receiving of course any desired variety. If alternate parcels of warp and of weft threads are merely of two materials of one color, say cotton and woollen, a sort of check is the result. Thus far, only the common arrangement is required, with two leaves of heddles. The production of twill, including diaper, damask, bombazine, cassimere, satin, &c., becomes more intricate. In all twills, the regular alternation of the warp threads ceases. A sort of stripe may be produced, indeed, by arranging the warp threads 2 or 3 in one leaf of heddles, the 3d or 4th in the other, and so on; but this does not give a twill, and still requires but two sets of heddles. Examining the different twills, as in satin or merino, the weft threads are found passing over 2 warp threads and under one, or over 3 and under one, or over even 4 or 6 and under one, according to the nature and fineness of the twill; the result being the well known smooth and glossy appearance of such stuffs on the right side, and a sort of diagonal ribbing on the other. The diagonal rib is due to the circumstance that if the first 3 threads, for instance, be passed over at one throw of the shuttle, the first of these falls under at the next throw, the group of 3 being taken one thread further on; and so on continually. To accomplish this, there must be 4 leaves of heddles, each receiving every 4th warp thread, with 4 corresponding treadles; the depression of one of these will carry down every 4th thread; that of the next, every 4th thread next beyond, and so on; but different kinds of twill can be produced by varying the combinations of the treadles. Of course, a twill of 4 threads to one will require 5 treadles; and similarly of other cases. When, instead of or in addition to a twill, the weaver must produce sprigs, flowers, spots, or any kind of figure, the operation becomes much more complex. According to the parts of the figure occurring in different parts of the cloth, the weft may have to pass at one moment over 4 and under one, over 2 and under 2 at the next, over 5 and under 3 at the next, and so through a great variety of combinations. To effect this by heddles, their number must be very great; and at length there is not room enough for them in the loom, nor means of managing them. To remedy this, the draw-loom was invented, in which the warp threads are controlled by strings, collected into the requisite number and succession of bundles, so that an assistant, the "draw-boy," either lifting or depressing the bundles in the proper order, takes up or carries down the warp threads as required to work out the parts of the figures. The arrangement of the strings and the handles controlling the collections of them must be previously made for each pattern; and this is called cording the loom. This method is now largely superseded by the Jacquard apparatus, which can be attached to almost any kind of loom. In this, a hollow prismatic box, extending the width of the fabric, has each of its sides perforated, in the direction of its length, with a number of straight rows of holes, corresponding, as each face is presented to the latter, accurately with the points of as many rows of metallic bars, called needles. Each of these needles is pressed toward the box by a spiral spring, and each has passing through a loop in its length a lifting hook, which takes up, when lifted, its proper thread of the warp. These rows of lifting hooks terminate above also in hooks; and an arrangement of lifting bars is let down after each throw of the shuttle, to engage these upper hooks, raise the lifting hooks, and with them the warp threads. The prismatic box has also a reciprocating movement, by which at the same moments its sides are brought up to the ends of the needles; and it turns to present a new face at each movement. If all the needles enter the holes of the box, all the lifting hooks are in position, and are engaged by the lifting bars as they descend, and all the warp threads are raised. But the weaving of complicated figures, such as those of carpets, tapestries, or shawls, requires that, through a certain cycle of movements of the shuttle, new groups of the warp threads continually shall be elevated. To determine, then, the groups of threads that shall be elevated, a succession of stiff cards looped together to form an endless chain of any required length, and all of size and form corresponding to those of a side of the perforated box, are made to move successively over the box, one lying flat upon it at each of its movements. Now, the order and groups of threads raised are simply determined by perforating these cards beforehand, and in succession, with groups of holes that shall precisely correspond only with the threads to be lifted for that part of the pattern. When the box now advances upon the needles, those meeting the unperforated portions of the card are forced back, their lifting rods are moved out of position, and only the threads answering to the needles that enter the holes are raised. With the use of this apparatus, it is only necessary further to arrange properly the succession of colors to appear in the weft, or in both warp and weft. The preparing of the cards for this apparatus, for producing intricate patterns, becomes itself a work of great nicety and labor; the perforations being made by a machine which is a sort of counterpart of the apparatus, and by punches set by the workmen according to the required pattern. Some improvements of the apparatus for particular uses have been made by English manufacturers. (See also JACQUARD.) This apparatus is mainly employed in connection with power loom weaving.—Not quite two centuries have passed since the origination of the first power loom, by M. de Gennes, a French naval officer of some distinction, who communicated his plan to the French academy of sciences in 1678. The advantages of productiveness, economy, uniformity of product, and convenience of weaving broad fabrics, which he claimed, are those practically realized and most important at the present day; but his loom was not brought into use. His account was translated in the same year into the "Philosophical Transactions;" and during a century or more several English inventors brought out power looms, none of which were generally adopted. The first successful power loom was the invention of the Rev. Edmund Cartwright (1785-'7). A principal cause which long delayed the adoption of these looms, was the necessity for stopping the machine frequently, to dress the warp as unrolled from the beam; the employment for this purpose of a man for each loom prevented any saving of expense. In 1802 Mr. Radcliffe and Thomas Johnson, of Stockport, England, obviated this difficulty by producing the dressing machine in use in modern factories, by which the dressing of the warp is completed before it goes into the loom, being, during one operation, sized, brushed, dried, and distributed on the warp beam. Later, Messrs. Horrocks and Marsland, also of Stockport, further completed the adaptation of the looms for being driven by steam; and Mr. Roberts, of Manchester, brought the working parts of the looms to nearly their present perfection. The frame of the power loom is of cast iron, and of great strength. The breast beam and cloth beam are situated much as in the hand loom. The warp beam, at the back of the loom, is at the level of the breast beam, and is kept back by a weight, while above and parallel with it, at the level of the cloth beam, is a roller over which the warp threads are passed, so as to lie on the loom in a horizontal direction. The heddles, for broad or heavy cloths, are so suspended by levers and cords that the depressing of one raises the other; for light goods, a pair of rollers with cords suffices. To work the heddles, there are on a shaft running transversely across the loom two eccentric wheels on tappets differently set, the rims of which run on friction rollers fixed on levers of the third kind, pivoted at one end to the frame, while the movable end of each connects with one of the heddles. When the longer radius of either eccentric is down, the shorter of the other is so, and the lever and heddle corresponding to the former are depressed. Into the shed of the warp thus formed the shuttle is thrown by a sharp jerk communicated to it alternately from either side, by means of a single whip lever at the centre of the loom, and moving a picking cord, or by means of two levers with short cords at the two sides; motion being in either case communicated to these at the proper moments by the mechanism. Thus, in the use of the single cord, the driving shaft in each loom, which in all cases derives its power through a band from the common shaft directly impelled by the engine, imparts motion to a second shaft running across the loom below it; while on this two rollers are so affixed, that one of them at each half turn of the shaft suddenly strikes down a roller on one side of the whip lever, and so, shortening another cord at this part, draws the lever and picking cord with a sharp jerk in the corresponding direction; the cord, acting on pickers as before explained, gives the throw to the shuttle. The stroke of the batten or lay, beating up the weft threads, is accomplished by means of cranks on the driving shaft, which so connect with arms projecting from the upright pieces of the batten (in these looms pivoted to the frame below), as to draw the batten forward after every throw of the shuttle. The connection of the shafts in the loom with each other, and with the cloth beam, to which a slow movement is imparted, is by toothed wheels, of such sizes as to give to each the required rate of speed. Among the late improvements in the power loom are those by which the loom is stopped when the weft thread breaks or is absent, when the driving band is shifted, and when the shuttle does not get clear of the shed; that in which the tension of the warp is obtained, not by a weight, but by springs fixed to the framing; and that of Mr. Ingram (1860) for resupplying the loom with weft as often as the bobbin or cop is exhausted, or when the thread is only broken.—The expense of material and time in preparing the cards for the Jacquard apparatus, which for the heaviest work must be of sheet iron, and for all intricate patterns very numerous, has always constituted the most serious drawback upon the desirableness of that method. Thus, an elaborate damask design has required 4,000 cards and 400 needles, at a cost of about $120, and 5 weeks' labor of a man in setting up; while a single design has been known to require 20,000 cards, at a cost of $600, and time equal to a year's labor of one man. With a view to reduce greatly these expenditures, M. Bonelli, well known in connection with recent electrical investigations, first constructed in 1854, and has since much improved, his "electric loom." In this, the cards of Jacquard's apparatus are superseded by an endless band of paper covered with tin foil, intended to serve as an electrical conductor; accordingly, the unperforated portions of the cards are here represented by non-conducting patches of black varnish, laid on with a brush. The band passes steadily along, under the points of rows of metallic rods or teeth. Each of these teeth connects with a small coil or helix, within which is a soft-iron bar. A frame capable of swinging slightly is situated in front of the ends of these bars, having a plate in it perforated with a corresponding number and order of holes, within and through which as many iron rods abutting at one end against the bars already named can move with a little friction, like as many piston rods through stuffing boxes. Now, the tin foil band being put in connection with a galvanic battery, with the other pole of which the remote ends of all the helices connect, all the metal teeth at a given time resting upon the bare foil conduct portions of the current, render the bars in their helices magnets, and by their action withdraw the corresponding rods out of the plate, leaving so many holes open; while the rods answering to the teeth that are on the varnished portions of the foil remain in and close the other holes. In this way, this single plate is made to serve for the endless succession of Jacquard cards; the needles entering these holes determining as before what warp threads shall be raised. By means of insulated strips of foil running along the back of the tin foil band, and connected with certain portions only of its face, separated by narrow insulating breaks, different colors or sorts of weft can be successively worked into the piece, according to the strips of foil successively put in connection with the battery. The inventor claims that, by this apparatus, the preparation for pieces of work of the present cost of those referred to can be reduced to about $30 and $130, with one and 4 weeks' time respectively, with the trifling additional expense of 2 Bunsen's cells daily; and with this, several incidental advantages; but these claims have yet to be tested by practice. In another improvement of the Jacquard loom recently made, a sheet of prepared paper punched with the proper apertures is substituted for the cards of the old machine; this paper being in form of a continuous band, only ¾ inch wide, so that the weight of the new is to that of the old band as but 1 : 11. The arrangement is also such as permits the 400 spiral springs in connection with the needles in the old machine to be dispensed with. Thus the wear and tear due to the resistance of these is done away with, and fine and light wires are introduced in lieu of the heavy ones previously employed.—American inventions in connection with the improvement of the power loom have been very numerous, but comparatively few changes of a radical character have been introduced. Mr. N. B. Carney, of New York, patented in 1857 a method of weaving fabrics within and upon a circular frame or loom, the shuttle being carried in a circle round the frame, with a continuous movement, the warps, shuttles, and filling being placed at the top of the loom, and a reciprocating movement being continuously given to heddles lying horizontally about the loom, so as to produce the shed properly in front of the shuttle. Other looms also for weaving bagging or circular fabrics have been devised. In the same year, Mr. E. B. Bigelow, of Boston, patented a method of weaving pile fabrics double, by means of transverse intersecting pile wires woven between the two fabrics so as to keep them properly apart, with movement at the same time of two shuttles, and an arrangement connecting each shuttle with the shipper or disconnecting lever of the loom, so that, when the filling fails in either shuttle, the loom is thrown out of gear.—The method of weaving in which 2 or 3 webs are in some parts separately produced at once, while in other parts these interlace in one web, forming two-ply and three-ply goods, has been termed double weaving; this, as well as the general subject of carpet weaving, is explained in the article CARPET. The term cross weaving may include those forms in which the threads of warp and weft are made to cross and twist about each other; as in lace, gauze, and bobbinet. (See LACE.) Chain weaving will properly include all those modes, as knitting, tambouring, embroidering, &c., in which a single continuous thread is made to form a web by means of interlooping. (See STOCKING.) In pile weaving, beside the warp and weft, a third thread is introduced; and this is thrown into continuous series of loops running the breadth of the cloth, by being woven over wires extending across the piece in the loom. These wires being drawn out, the loops may be left entire on the face of the cloth, as in the Brussels carpeting; or they may be cut, so as to form a soft nap, the pile, giving a smooth and velvety feel to the surface, as in Wilton carpeting, velvets, doeskin, fustian, &c. Netting is a simple sort of weaving, in which the threads are tied at the points of intersection, so as to form meshes, usually equal, of any desired size.—For related subjects, see also COTTON MANUFACTURE, DAMASK, EMBROIDERY, LINEN, RIBBON, SILK, TAPESTRY, VELVET, and WOOL.

WEBB, a S. co. of Texas, bounded N. by the Nueces river, and W. by the Rio Grande, which separates it from the Mexican state of Tamaulipas; area, about 3,200 sq. m.; pop. in 1860, 1,446. Cameron co. was formed out of part of Webb in 1859. The surface is undulating and the soil generally fertile. Capital, Laredo.

WEBB, JAMES WATSON, an American journalist, born in Claverack, N. Y., Feb. 8, 1802. He is a son of Gen. Samuel B. Webb, who served during the revolution. The son entered the U. S. army as 2d lieutenant in Aug. 1819, was promoted to a first lieutenancy in 1823, and the next year was made assistant commissary of subsistence. In 1827 he resigned his commission and took charge of the "New York Courier," which had been established in May of that year. In 1829 he purchased the "Enquirer" and united the two under the name of the "Morning Courier and New York Enquirer," and at that time became sole editor and in 1830 sole proprietor of the journal. It was at an early period identified with the interests of the whig party, and maintained its fidelity to that party during its existence. In 1850 President Taylor appointed him chargé d'affaires to Vienna, but the senate did not confirm the nomination. In 1851 Gov. Hunt, of New York, appointed him an aide-de-camp with the rank of brigadier-general. In 1861 President Lincoln appointed him minister to Brazil, where he now is (Sept. 1862).

WEBBE, SAMUEL, an English composer, born in 1740, died in 1817. His father dying in embarrassed circumstances, he was apprenticed at 11 years of age to a cabinet maker, which occupation he abandoned upon the completion of his term, and, while employed in copying music, came under the notice of a German organist who instructed him in the principles of his art. At the age of 26 he gained a prize medal from the catch club for a canon. Thenceforth he rose into considerable eminence as a composer of glees, catches, and canons, a collection of which, numbering over 100 compositions, was published in 3 volumes. He also wrote masses, anthems, single songs, and other miscellaneous pieces. He was an accomplished scholar in Greek, Hebrew, and other languages.

WEBBER, CHARLES WILKINS, an American author, born in Russellville, Ky., May 29, 1819, killed in Nicaragua in 1856. In early youth he passed several years of adventurous life on the Texan frontier, and about the age of 25 settled in New York with the intention of devoting himself to literature. He was for a short time assistant editor of the "American Review," and was a prolific contributor to that and the "Democratic Review" and other periodicals, in which appeared in a serial form his "Old Hicks the Guide," and other tales of backwoods life and adventure; and in 1849 he published the "Gold Mines of the Gila." His remaining works comprise the "Hunter Naturalist" (1851), "Spiritual Vampirism" (1853), "Tales of the Southern Border" (1853), and "Wild Scenes and Song Birds" (1854), forming a 2d volume of the "Hunter Naturalist." In 1856 he joined an expedition to Nicaragua in aid of William Walker, and lost his life during one of that adventurer's retreats.

WEBBER, SAMUEL, 14th president of Harvard college, born in Byfield, Mass., in 1759, died in Cambridge, July 17, 1810. He was graduated at Harvard college in 1784, taking high rank as a mathematical scholar, subsequently entered the ministry, and in 1787 was appointed university tutor of mathematics. In 1789 he succeeded Professor Williams in the chair of mathematics and natural philosophy, which he retained until the death of President Willard in 1804, when he was appointed his successor. He died while holding this office. He was one of the commissioners appointed to determine the boundary between the United States and the British provinces, and published a text book entitled "A System of Mathematics" (2 vols. 8vo., 1801).

WEBER, a N. W. co. of Utah territory, bordering on Washington and Nevada territories, and drained by Bear and Weber rivers and the head streams of the Humboldt; area, about 12,500 sq. m.; pop. in 1860, 3,675. Great Salt lake occupies a portion of the E. part, and there are small lakes in other parts. The E. end is traversed by the Wahsatch mountains, and Bartram's peak is in the N. part. The soil of the valleys is generally productive. Various minerals are found. Capital, Ogden.

WEBER, Ernst Heinrich, a German physiologist and anatomist, born in Wittenberg, June 25, 1795. He studied at Leipsic, and the publication of his *Anatomia Comparata Nervi Sympathici* (Leipsic, 1817) gained for him there in 1818 the adjunct professorship of comparative anatomy, of which he afterward became titular professor, and in 1840 also of physiology. His principal works are: *De Aure et Auditu Hominis et Animalium* (Leipsic, 1820); *Zusätze zur Lehre vom Bau und von der Verrichtung der Geschlechtsorgane* (1846); and *Annotationes Anatomicæ et Physiologicæ* (1851). He has also aided the researches of his brother Wilhelm Eduard, and edited several important works. —Wilhelm Eduard, a German physicist, brother of the preceding, born in Wittenberg, Dec. 24, 1804. He was educated at the university of Halle, and in 1825 published in connection with his elder brother, Ernst Heinrich, *Die Wellenlehre*, a standard treatise on the liquid fluidity of waves, with its application to waves of sound and light. In 1827 he was appointed assistant professor of natural philosophy at the university of Halle, and in 1831 professor of physics at Göttingen, from which latter office he was displaced by the Hanoverian government in 1837 for his liberal political opinions. In 1845 he was appointed to the chair of physics in Leipsic, where he remained until 1849, when he was reinstated in his professorship at Göttingen. He has given much attention to acoustics, optics, electricity, and terrestrial magnetism, the last named of which sciences he investigated in conjunction with Gauss. Their joint work, entitled *Resultate aus den Beobachtungen des magnetischen Vereins* (1840), accompanied by an *Atlas des Erdmagnetismus*, has been the means of founding a new theory on terrestrial magnetism; and at their suggestion magnetic observatories have been established at several important points. In 1846–'52 Professor Weber published his *Electrodynamische Massbestimmungen*, treating of the action of electric currents, of the resistance opposed to them by conductors, and of diamagnetism.

WEBER, Karl Maria Friedrich Ernst, baron von, a German composer, born at Eutin, in Holstein, Dec. 18, 1786, died in London, June 5, 1826. His father, who was a musician of some distinction, gave him a liberal education, and afforded him the means for studying music and painting. He gained considerable skill in the use of pencil and brush, and made some progress in engraving; but at the age of 12 he had fixed his mind upon music, and abandoned his other pursuits. He was taught first by the pianist Hauschkel, of Hildburghausen, and afterward by Michael Haydn. In 1798 Weber's first productions, 6 fughetti, were published by his father, and were encouragingly reviewed by the Leipsic "Musical Gazette." He did not long continue with Haydn, but repaired to Munich, where he received lessons in singing from Valesi, and in composition from Kalcher, the organist of the chapel royal. He here composed an opera entitled *Die Macht der Liebe und des Weins*, which he subsequently destroyed, together with a grand mass, several pianoforte sonatas, songs, &c., written about the same time. His fondness for pictorial art was revived at this period by the discovery of lithography, to which he gave himself up for a considerable time, endeavoring to effect improvements upon the original invention. But in 1800 he returned with new zeal to the study of music, and produced an opera called *Das Waldmädchen*, which, although it became popular, was by himself regarded as possessing little value. In 1801 he composed *Peter Schmoll und seine Nachbarn*, which met with slight success. In 1802 he went to Vienna, where he remained two years, studying with the abbé Vogler. His reputation was now such that he received the appointment of chapelmaster at Breslau, where he hastily composed an opera called *Rübezahl*. In 1806 he entered into the employment of Prince Eugene of Würtemberg, and produced at Carlsruhe in Silesia two symphonies and a number of less important works. The troubles of the period compelling him to abandon this situation, he resided for a while at Stuttgart with Duke Louis of Würtemberg, for whom he rewrote *Das Waldmädchen*, under the new title of *Sylvana*. In 1810 he commenced a long professional tour, visiting the principal cities of Germany, producing his operas and giving concerts. At Darmstadt he composed *Abou Hassan*. From 1813 to 1816 he conducted the opera at Prague, and only left this situation to assume that of manager of the German opera at Dresden—an institution which, it may be said, he founded in that city. This post he held until his death. In 1822 he produced at Berlin his principal work, *Der Freischütz*, which for a long time held its place in every theatre in Germany, and two years later was received in London and Paris with hardly less favor. In 1823 *Euryanthe* was first performed at Vienna, with a success not less substantial, although less vehemently demonstrated, than that of *Der Freischütz*. In 1824, soon after the reproduction of his *chef d'œuvre* in England, he was applied to by Mr. C. Kemble for an opera for London; and on April 12, 1826, *Oberon* was first represented at the Covent Garden theatre. Its production was the occasion of the most affectionate personal recognition he had ever received. Weber himself conducted the performance, and was saluted with unprecedented ardor. The overture was encored, and repetitions were demanded of almost every important scene. In the midst of his greatest success, Weber was seized with a pulmonary disease, and was one day found dead in his bed. He was buried in the Roman Catholic chapel at Moorfields.—Of Weber's operas only one now holds the stage, and he is best known, not by his most ambitious orchestral works, but by his overtures, which have been made familiar in concerts the world over. His instrumental writing is of the highest order. He invented effects which up to his time were unknown, and discovered resources which no previous composer had employed. The overtures of *Der Freischütz*, *Oberon*, and *Euryanthe* stand in the first rank of dramatic orchestral writing. The characteristics of his operas are rich, stately, and original melody, combined with the amplest effects in harmonic treatment that musical learning can bestow, and extreme attention to the dramatic requirements of his subject. Of his pianoforte compositions many remain in vogue, and the popularity of his songs is altogether undiminished.

WEBSTER. I. A new W. co. of Va., drained by Gauley and Elk rivers, tributaries of the Kanawha; area, about 400 sq. m.; pop. in 1860, 1,555, of whom 3 were slaves. It was formed out of parts of Pocahontas, Randolph, Braxton, Nicholas, and Greenbrier counties. The surface is generally very hilly, and in some parts mountainous. Iron ore and bituminous coal are found in great abundance. II. A new W. co. of Ga., formerly named Kinchafoona, drained by Kinchafoona creek and other streams; area, about 325 sq. m.; pop. in 1860, 5,030, of whom 2,287 were slaves. The surface is undulating and the soil fertile. Capital, Webster. III. A new N. W. co. of Ky., formed out of parts of Hopkins, Henderson, and Union counties, bounded N. W. by Green river, and drained by its tributaries; area, about 475 sq. m.; pop. in 1860, 7,533, of whom 1,083 were slaves. It has a diversified surface and a fertile soil. The Green river is rendered navigable by slack water improvements. Capital, Dixon. IV. A central co. of Iowa, intersected by the Des Moines river, and also drained by its branches Boone and Lizard rivers and several large creeks; area, 1,080 sq. m.; pop. in 1860, 2,504. The surface is diversified by prairie and woodland, and the soil is tolerably fertile. The productions in 1859 were 2,281 bushels of wheat, 43,459 of Indian corn, 3,264 of oats, 39,549 lbs. of butter, and 3,157 tons of hay. It is intersected by the proposed line of the Chicago, Iowa, and Nebraska railroad, partially constructed. Capital, Homer. V. A new S. W. co. of Mo., formed out of parts of Green and Wright counties, drained by several branches of the Gasconade and White rivers; area, about 575 sq. m.; pop. in 1860, 7,099, of whom 220 were slaves. The surface is undulating and the soil fertile. Iron ore is found. Capital, Marshfield.

WEBSTER, Benjamin, an English comedian and theatrical manager, born in Bath, Sept. 3, 1800. He was educated for the navy, but after the general peace of 1815 studied music, and in 1825 made his first appearance upon the stage, where in a few years he attained a considerable professional eminence. In 1837 he became manager of the Haymarket theatre, and during his lesseeship expended annually large sums for original works by Bulwer, Knowles, Jerrold, and other well known playwrights, which were brought out at his theatre, where at the same time appeared Macready, Wallack, Farren, Miss Faucit, and other eminent actors and actresses. Of late years he has had the management of the Adelphi theatre. As an actor his range of parts is large and varied; he excels in characters of homely pathos, and has played Lavater, Tartufe, Belphegor and Triplet successfully.

WEBSTER, Daniel, an American statesman and jurist, born at Salisbury, N. H., Jan. 18, 1782, died at Marshfield, Mass., Oct. 24, 1852. He was the second son of Ebenezer Webster and his second wife, Abigail Eastman. (See Webster, Ebenezer.) The schools on the frontier in his childhood (Salisbury being then the furthest settlement toward Canada in this part of New England) were very indifferent, and the circumstances of the family did not allow him any extraordinary advantages of education. When the village school happened to be kept near his father's house, attendance was easy; but it was sometimes remote, and sometimes in a neighboring town. When he was still very young, he was in some seasons sent daily from 2½ to 3 miles to school, sometimes getting a lift from the miller or the blacksmith, but more frequently going and returning on foot. When the school was at a still greater distance he was boarded at a neighbor's. Slender as these opportunities were, they were afforded to Daniel more liberally than they had been to his brothers. He showed greater aptitude for learning, and was also thought to be of too feeble a constitution for any robust mode of life. It was not uncommon in those days, however contrary to the laws of health, to bestow the privilege of a college education and a sedentary life on the narrow-chested Benjamin of the flock. A half brother of Daniel used to say good-humoredly, that "Dan was sent to school that he might get to know as much as the other boys." Mr. Webster's first master was Mr. Thomas Chase, who could read tolerably well and wrote a fair hand, but was not strong in spelling. His second master was James Tappan, who was living a few years ago at Gloucester, Mass. Having in 1851 written a letter to his former pupil, then secretary of state, recalling to his recollection some of the incidents of their early relation as teacher and pupil, Mr. Webster returned him an answer from Washington, enclosing a liberal present, and full of minute reminiscences and kind feelings. The best part of his early education was probably derived from his father and mother. He also derived some benefit from a small social library which had been founded at Salisbury by Mr. Thompson (the lawyer of the place), the clergyman, and Mr. Webster's father. It is worth noting that, like Franklin and Washington, he was, even at this early period of life, fond of reading the "Spectator." Franklin, as he tells us himself, formed his style on the model of Addison. There is no such resemblance between the style of Mr. Webster and that of the "Spectator," unless it be in the negative merit of freedom from balanced sentences, hard words, and inversions. It may however have been owing to his early reading of the "Spectator" that he escaped the turgidity of the Johnsonian school, and grew up to the mastery of that direct and forcible, but not harsh and affected, sententiousness, and that masculine simplicity, with which his speeches and writings are so strongly marked. In 1796 he was sent to Phillips Exeter academy, then under the charge of Dr. Benjamin Abbot. Though enjoying the advantages of this institution but for a few months, his mind there received a powerful impulse. He relates of himself, while at the academy, that, though he made tolerable progress in other branches, he never could make a declamation. He could never muster courage to speak before the school. "The kind and excellent Buckminster (a member of the senior class, afterward the celebrated Rev. Joseph Stevens Buckminster) sought especially to persuade me to perform the exercise of declamation like the other boys, but I could not do it. Many a piece did I commit to memory, and recite and rehearse in my own room, over and over again; yet when the day came, when the school collected to hear the declamation, when my name was called and I saw all eyes turned to my seat, I could not raise myself from it. Sometimes the instructors frowned, sometimes they smiled. Mr. Buckminster always pressed and entreated most winningly that I would venture; but I never could command sufficient resolution." In other respects he gave decided promise of future eminence. Mr. Nicholas Emery, afterward a distinguished lawyer and judge in Maine, was at that time an assistant teacher in the academy. Mr. Webster, on his first admission, was placed under his care in the lowest class. At the end of the month, after morning recitations, "Webster," said Mr. Emery, "you will pass into the other room and join a higher class;" adding: "Boys, you will take a final leave of Webster; you will never see him again." The circumstances of the family were unequal to the expense of a protracted residence at Exeter, and in Feb. 1797, Daniel was taken home and placed in the family of the Rev. Samuel Wood, of the neighboring town of Boscawen, whose entire charge for board and instruction was one dollar per week. On their way to Mr. Wood's, his father first opened to Daniel, now 15 years of age, the intention of sending him to college, an advantage to which he had never thought of aspiring. "I remember," says Mr. Webster in an autobiographical sketch of his early life, "the very hill which we were ascending through deep snows, in a New England sleigh, when my father made known this purpose to me. I could not speak. How could he, I thought, with so large a family and in such narrow circumstances, think of incurring so great an expense for me? A warm glow ran all over me, and I laid my head on my father's shoulder and wept." Mr. Webster was prepared for college under Mr. Wood, and entered at Dartmouth in the autumn of 1797. The knowledge of the ancient languages which could be attained in less than a year's preparation was of course not great; but the attainments which may be made, even in that short time, by a youth of preëminent talent, studying night and day, under the twofold spur of necessity and resolute ambition, are not to be measured by the languid progress of the sons of prosperity, kept at school from childhood as a matter of routine. The studious habits which he brought with him were kept up by young Webster for the 4 years which he passed at college. Beside diligent attention to the prescribed studies, he read widely, especially in history and general English literature. He laid a good foundation in the ancient languages, which enabled him to read the Latin classics with pleasure through life. He took part with his fellow students in the publication of a little weekly newspaper, furnishing selections from books and magazines, with an occasional article from his own pen. Overcoming the boyish shyness under which he labored at the academy, he delivered addresses before the college societies, some of which found their way into print. The long winter vacations were not seasons of repose. Like most students of narrow circumstances at the New England colleges, he employed the winter months in teaching school, for the purpose of eking out his own frugal means, and aiding his elder brother Ezekiel to prepare himself for college. The attachment between the two brothers was unusually strong, and it was by the persuasion of Daniel that the father had been induced to strain his resources, in order to afford to Ezekiel also the benefit of a college education. By the close of his first year young Webster had shown himself decidedly the foremost man of his class, and that position he held through his whole college course. He failed at its termination to attain the first rank in the academic scale, but the story of his tearing up his diploma in disgust is a myth. Immediately on his graduating in 1801, Mr. Webster entered the office of Mr. Thompson, his father's next door neighbor, as a student of law. This was a fortunate arrangement. Mr. Thompson was a gentleman of education and intelligence, and at a later period successively a member of the house of representatives and the senate of the United States. Here Mr. Webster remained till he felt it necessary "to go somewhere and do something to earn a little money." Application being made to him to take charge of the academy at Fryeburg, Maine, on a salary of $350 per annum, he accepted the offer, and repaired to the scene of his new duties on horseback. He boarded with the register of deeds at $2 per week, and added to his frugal salary as teacher of the academy his earnings as a copyist of deeds, which, by devoting the long winter evenings to the work, were enough to pay his board. Two folio volumes in his handwriting are still extant in the office of the register to attest his industry. His current expenses thus provided for, the greater part of his salary was saved—a fund for his own professional education, and to help his brother through college. He remained but from January to September, 1802, in the academy of Fryeburg, and from the latter date till the spring of 1804 continued the study of his profession under Mr. Thompson, a good lawyer, but of the old school. "I was put to study," says Mr. Webster, "in the old way, that is, the hardest books first, and lost much time. I read Coke Littleton through, without understanding the quarter part of it. Happening to take up Espinasse's 'Law of Nisi Prius,' I found I could understand it; and arguing that the object of reading is to understand what is written, I laid down the venerable Coke *et alios similes reverendos*, and kept company for a time with Mr. Espinasse and others, the most plain, easy, and intelligible writers. A boy of 20, with no previous knowledge on such subjects, cannot understand Coke. It is folly to set him on such an author." In addition to his law reading while in Mr. Thompson's office, he read Hume's history for the second time, and gave also a good deal of time to the more familiar Latin classics, Cæsar, Sallust, and Horace, and the orations of Cicero, some of which he committed to memory. He read Juvenal in company with his brother in a college vacation, but never, he tells us, mastered this author so as to read him with ease and pleasure. His amusements were in the field, riding and shooting; of these sports and of fishing he was through life passionately fond. The father's salary of $400 per annum as judge of the court of common pleas enabled him to afford some assistance to his sons, struggling into life; but by the winter of 1804 they found it necessary to resort to some means of self-support. For this purpose, in February of that year, Daniel went to Boston on a visit of exploration. He knew but one person there, Dr. Cyrus Perkins, a young physician from New Hampshire, himself recently established in Boston, and seeking an addition to his professional income by keeping a small private school. This school he was now willing to give up, and proposed that Ezekiel Webster should take it. Daniel hastened home with the tidings of this offer, which was gladly accepted by the brother. Not having completed his senior year at college, permission to absent himself was asked and obtained by Ezekiel Webster of the college faculty, on condition of keeping up with his class by private study. His success in the school was so considerable, that, beside paying his own debts and supporting himself, he felt able to meet the expense of his brother Daniel's residence in Boston, for what remained of his term of legal study. Accordingly, on July 17, 1804, Daniel Webster arrived in Boston, then 22 years of age, knowing no one but Dr. Perkins, and all but penniless. Mr. Christopher Gore, a gentleman of considerable distinction as a lawyer and a statesman, afterward governor of Massachusetts and senator in congress, had just then returned from England, where he had acted for several years as a commissioner under Jay's treaty, and had reëstablished himself in his profession. He was a gentleman of great amenity of manners and much personal popularity. The bold thought occurred to Mr. Webster to introduce himself to Mr. Gore as a student of law and clerk. The manner in which it was done is related by himself in the following words: "A young man as little known to Mr. Gore as myself undertook to introduce me. In logic this would have been bad; *ignotum per ignotum*. Nevertheless it succeeded here. We entered Mr. Gore's rooms, and my name was pronounced. I was shockingly embarrassed, but Mr. Gore's habitual courtesy of manner gave me courage to speak. I had the grace to begin with an unaffected apology; told him my position was very awkward, my appearance there very like an intrusion, and that if I expected any thing but a civil dismission, it was only founded on his known kindness and generosity of character. I was from the country, I said, had studied law for two years, had come to Boston to study a year more; had some respectable acquaintances in New Hampshire, not unknown to him, but had no introduction; that I had heard he had no clerk, and thought it possible he might receive one; that I came to Boston to work and not to play; was most desirous on all accounts to be his pupil; and all I ventured to ask at present was, that he would keep a place for me in his office till I could write to New Hampshire for proper letters, showing me worthy of it. I delivered this speech trippingly on the tongue, though I suspect it was better composed than spoken. Mr. Gore heard me with much encouraging good nature. He evidently saw my embarrassment, spoke kind words, and asked me to sit down. My friend had already disappeared. Mr. Gore said what I had suggested was very reasonable and required little apology; he did not mean to fill his office with clerks, but was willing to receive one or two, and would consider what I had said. He inquired of me and I told him what gentlemen of his acquaintance knew me and my father in New Hampshire. He talked to me pleasantly for a quarter of an hour; and when I rose to depart he said: 'My friend, you look as though you might be trusted. You say you came to study and not to waste time. I will take you at your word. You may as well hang up your hat at once; go into the other room, take your book and sit down to reading it, and write at your convenience to New Hampshire for your letters.'" Mr. Webster justly regarded his admission to Mr. Gore's office as "a good stride onward." It was a situation which gave him the means of studying books, and things, and men. It was on July 20, 1804, that he first made himself known to Mr. Gore, and he remained in his office only till the March following, and that not continuously; but it was a period of close study, diligent attendance on the courts, and rapid progress. Beside miscellaneous authors on the one hand, and strictly professional literature on the other, he read Ward's "Law of Nations," Vattel for the third time, Lord Bacon's "Elements," and Pufendorf's Latin compendium of the history of Europe. His main study, however, was in the common law. Among other works, he went through Saunders's "Reports," in the old folio edition, and abstracted and put into English, out of Latin and Norman French, the pleadings in all the cases. He also made reports of every case decided in the supreme court of Massachusetts, and in the circuit court of the United States, while he was a student in Mr. Gore's office. Shortly after his arrival in Boston, his elder brother, who, as has been stated, had succeeded Dr. Perkins in the small private school (kept in Short street, now the lower part of Kingston street, Boston), returned for a short time to Dartmouth college, to attend to his graduation, leaving his school in the care of Mr. Daniel Webster. The writer of this article was one of the pupils of the school, and the acquaintance then commenced with Mr. Webster ripened into a friendship which lasted through life. Shortly before Mr. Webster's admission to the bar, an incident occurred which came near permanently affecting his career. The place of clerk in the court of common pleas for the county of Hillsborough, N. H., became vacant. Mr. Webster's father was a member of this court, and from regard to him the vacant clerkship was offered to the son. It was what the father, now advanced in years, had long desired and looked forward to. The income of the office was about $1,500 a year, which in those days, and to a person in narrow circumstances, was an ample fortune. Mr. Webster was disposed to accept it. It promised immediate independence, and, what he prized more, the means of adding to the comforts of his family. But though willing himself to sacrifice his visions of professional advancement to the interests of those whom he held dear, he was persuaded by Mr. Gore to decline the tempting offer. This judicious friend saw in it the postponement, perhaps the final abandonment, of all hopes of a splendid career. The aged father, though greatly disappointed, if not reconciled to his refusal of the office in a personal interview with his son, was induced to bury his regrets in his own bosom, and the subject was never mentioned by him again. In the spring of the same year (1805) Mr. Webster was admitted to the bar of the court of common pleas in Boston. According to the custom of that day, Mr. Gore accompanied the motion for his admission with a brief speech in recommendation of his pupil. He lived to see the speedy fulfilment of the anticipations of his success then uttered. After his admission to the bar in Boston, Mr. Webster passed a year in the practice of his profession at Boscawen, in the immediate neighborhood of his father. Shortly after the decease of his father in the following year, he was admitted to the superior court of New Hampshire, and established himself at Portsmouth, then the capital of the state. Here he rose at once to full practice at a bar composed of eminent counsel, and attended by others of distinction from Massachusetts. Of the latter were Samuel Dexter (who divided with Theophilus Parsons the leadership of the profession in Massachusetts) and Joseph Story; of the lawyers of New Hampshire, Jeremiah Mason was *facile princeps*. Nothing illustrates more plainly the rapidity with which Mr. Webster rose in his profession, than the fact that he shared the best practice with contemporaries like those just mentioned, rarely ever having appeared in the whole course of his life as junior counsel, except when associated with the attorney-general of the United States, who of course claimed precedence in virtue of his office.—Mr. Webster came forward in life at a time when party spirit ran high. He had inherited from his father the principles of the federal party, and his sympathies were with them during the administrations of Presidents Jefferson and Madison. The questions at issue principally related to foreign affairs. The decrees of the French imperial government and the orders in council in England had swept the commerce of the United States from the seas. Not deeming it expedient to engage in hostilities with either power, still less with both, the United States government endeavored, by what was called the restrictive system (the embargo and non-intercourse), to protect our trade and to compel the belligerent powers to respect our neutral rights. This policy, not calculated to be very popular in any part of the country, was generally condemned in New England, where federal politics prevailed more than in any other part of the Union, and where what little of our commerce had escaped the foreign belligerents was now paralyzed by the measures, however well intended, of our own government. Mr. Webster shared these views, and expressed them in speeches and resolutions on public occasions. He did not however, for some years, embark deeply in politics. Having married in 1808, he felt new inducements to the exclusive pursuit of his profession. At length in the summer of 1812 war was declared by congress against Great Britain. This event, long foreseen, and deprecated by the federal party, created a demand for the best talent the country could furnish, in every department of the public service. Mr. Webster had already established a commanding reputation, and in the month of Nov. 1812, without any previous service in the legislature of New Hampshire, he was elected to the house of representatives of the United States.

He took his seat in the special session of May, 1813, and in the organization of the house he was placed by the speaker, Mr. Clay, on the committee of foreign affairs. There were men of great force in the 13th congress, especially in the house of representatives. Among them, beside several of less distinction, but still of eminent ability, were Clay, Calhoun, Lowndes, Pickering, Gaston, and Forsyth. Mr. Webster at once took rank with the foremost, both for business and debate. The complications with foreign powers which had brought on the war, and the ways and means for meeting the greatly increased expenditure of the government, were the subjects which principally occupied the house; and in the debates on both Mr. Webster took a leading part. Opposed to the policy of declaring war, he was nevertheless in favor of conducting it with vigor upon the ocean (where our infant navy had already achieved the most brilliant triumphs), and of maintaining the public credit by placing the finances of the country on a firm basis of solvency. Early in the session he moved a series of resolutions on the repeal of the Berlin and Milan decrees, and on June 10, 1813, delivered his maiden speech on that subject. No full report of this speech was made at the time, and it is known only by imperfect sketches and the traditions of the day. Proceeding from a person almost wholly unknown at Washington, it took the house and the country by surprise. Chief Justice Marshall, in a letter to Mr. Justice Story, said: "At the time when this speech was made, I did not know Mr. Webster; but I was so much struck with it, that I did not hesitate then to state that Mr. Webster was a very able man, and would become one of the very first statesmen in America, perhaps the very first." Beside his own resolutions, the subjects on which Mr. Webster addressed the house in the 13th congress were the increase of the navy, which he warmly recommended, the repeal of the embargo, which was odious to his constituents, and an appeal from the decision of the chair on a motion for the previous question. His speeches on these subjects placed him in the first rank of debaters. He displayed, on his very entrance into public life, that familiarity with the history and traditions of the government, and that self-possession on the floor, which are usually acquired only by long experience. They gained for him the reputation indicated by the well known remark of Mr. Lowndes, that "the North had not his equal nor the South his superior." It was not the least conspicuous of the strongly marked traits of his character as a public man that, at a time when great party virulence prevailed, he never permitted himself to be infected with its contagion. His opinions were firmly maintained and boldly expressed, but without personal asperity toward those who differed from him. He cultivated friendly relations on both sides of the house, and gained the respect of those most warmly opposed to him in politics. He was reëlected to congress in Aug. 1814. The third session of the 13th congress was soon cheered with the prospect of peace. Before the news of the treaty of Dec. 24, 1814, was received, a project of a new bank of the United States was introduced into the house as an administration measure. By this bill the bank was relieved from the obligation of redeeming its notes in coin. On this ground it was opposed by some of the ablest members on both sides of the house, Mr. Lowndes, Mr. Webster, and Mr. Calhoun, and was lost by the casting vote of Mr. Cheves, who had succeeded Mr. Clay as speaker. Mr. Webster's speech on this bill exhibits a perfect mastery of the abstruse subjects of banking, finance, and currency. The bill was revived, on a motion for its reconsideration, by Mr. Webster, and such amendments were made to it that it passed the house by a large majority. It was carried through the senate in this amended form with some difficulty, but was vetoed by President Madison, being one of the two cases in which he exercised the veto power. The interval between the 13th and 14th congresses (from March to Dec. 1815) was passed by Mr. Webster at home, in the diligent practice of his profession. He had in Dec. 1813, and in his absence at Washington, suffered very severely by what was justly called the "great fire at Portsmouth." His house and all its contents, including his library, were destroyed, entailing upon him the loss of the entire fruits of his professional labor. This disaster, as well as the general unproductiveness of the profession in a place so small as Portsmouth, decided him to seek a wider and a more lucrative field. The 14th congress met in Dec. 1815. The country was recovering with great rapidity from the depression of the war. The fierce divisions of party were succeeded by an "era of good feeling." The general pacification of Europe had for the time disposed of the old controversies about our foreign relations. A new state of things had arisen at home, creating new interests and bringing up new questions. The finances of the country had been greatly deranged by the expenditure of the war. The West was filling up with great rapidity, and called for increased facilities of communication with the coast; and the manufactures, which, under the restrictive system and the war, had become a very considerable public interest, were too important to be sacrificed to foreign competition. The navy had fought itself into favor, and the war with Algiers in 1816 showed the impolicy of reducing it; while the necessity of a system of sea-coast fortifications had made itself felt during the late contest. New and urgent wants and interests thus presented themselves, calling for the highest efforts of a patriotic statesmanship, embracing the whole country. This was well met by the leading statesmen of the day, Clay, Calhoun, Webster, Lowndes, and Cheves. It will excite some surprise to the younger reader, conversant only with the period immediately preceding the present struggle (1825–'50), to find how little difference existed in the 14th congress among the distinguished persons named and their associates. It is a sufficient illustration of this remark, that the minimum square yard duty on coarse cottons, which laid the foundation of the policy of protecting manufactures, was carried through the house of representatives under the auspices and by the influence of Mr. Lowndes and Mr. Calhoun, satisfied that the creation of a second market for the raw material would be a great benefit to the southern planter. Mr. Webster took an active part in the debates on the charter of the bank of the United States, which passed the house in April, 1816. The amendment requiring the payment in specie of deposits, as well as notes, was moved by him. His most important service at this session was the introduction of a resolution requiring all payments to the treasury, after Feb. 20, 1817, to be made in specie or its equivalents. This measure prevailed, and restored the depreciated currency of the country.—At the close of the session, in Aug. 1816, Mr. Webster fulfilled the purpose of seeking a wider professional field, and, after some hesitation between Albany and Boston, decided on Boston, in which and its vicinity he made his home, except while officially resident at Washington, till the end of his life. He had finished the study of his profession and established friendly relations there in early life. In no part of the Union was his now widespread reputation more promptly recognized. He at once took the place in his profession due to his commanding talent and legal eminence, and was cordially welcomed in every circle of social life. With Mr. Webster's removal to Boston succeeded a period of 7 years' retirement from active political employment, during which time, with a single exception to be presently mentioned, he filled no public office, but devoted himself exclusively to the practice of his profession. It was in these 7 years that his reputation as a lawyer was established. The promise of his youth and the expectations of those who had known him as a student were more than fulfilled. He took a position as a counsellor and an advocate, above which no one has ever risen in this country. A choice of the best business in New England, and of that of the whole country which was adjudicated at Washington, passed into his hands. Beside the reputation which he acquired in the ordinary routine of practice, Mr. Webster, shortly after his removal to Boston, took a distinguished lead in establishing what might be called a school of constitutional law. It fell to his lot to perform a prominent part in unfolding a most important class of constitutional doctrines, which, either because occasion had not as yet drawn them forth, or the jurists of a former period had failed to deduce and apply them, had not yet grown into a system. It was reserved for Mr. Webster to distinguish himself before most, if not all, of his contemporaries, in this branch of the profession. It is a coincidence worth noticing, that the first of the cases of this class in which he took a prominent part, the famous Dartmouth college case, arose in his native state, and concerned the institution at which he was educated. In the months of June and December, 1816, the legislature of New Hampshire passed laws altering the charter of Dartmouth college (of which the name was changed to Dartmouth university), enlarging the number of the trustees, and generally reorganizing the corporation. These acts, although passed without the consent and against the protest of the trustees of the college, went into operation. The newly created body took possession of the corporate property and assumed the management of the institution. The old board were all named as members of the new corporation, but declined to officiate as such, and brought an action against the treasurer of the new board for the record books, the original charter, the common seal, and other corporate property of the college. The general issue was pleaded by the defendants and joined by the plaintiffs. The case turned upon the points whether the acts of the legislature above referred to were binding upon the old corporation without their assent, and not repugnant to the constitution of the United States. It was argued twice with great ability in the courts of New Hampshire, Mr. Webster at the second trial, though then removed to Boston, being, with Mr. Mason and Judge Smith, of counsel for the plaintiffs. It was decided by Chief Justice Richardson that the acts of the legislature were constitutional and valid. The case was immediately appealed to Washington, and on March 10, 1818, was argued by Mr. Webster and Mr. (afterward Judge) Hopkinson of Philadelphia for the plaintiffs, and Mr. John Holmes of Maine and the attorney-general Wirt for the defendants, in error. So novel was the complexion of the case, that one of the court, having run his eye over the record, is reported to have said that he did not see how any thing could be urged for the plaintiffs. Mr. Webster as junior counsel opened the case, on the broad grounds that the acts of the legislature of New Hampshire were not only against common right and the constitution of the state, but also—and this was the leading point—a violation of that provision of the constitution of the United States, which forbids the individual states to pass laws impairing the obligation of contracts. Under the first head, the English law relative to educational institutions was unfolded by Mr. Webster, and it was shown that colleges, unless otherwise specifically constituted by their charters, are private eleemosynary corporations, over whose property, members, and franchises the crown has no control, except by due process of law for conduct inconsistent with their charters. The whole learning of the subject was brought to bear with overwhelming weight on this point. The second main point was, that the charter of such an institution is a contract within the meaning of the constitution of the United States, which it is not competent for the legislature of a state to annul. The argument throughout was conducted with a closeness and vigor never surpassed in our courts. The topics were beyond the usual range of judicial investigation in this country; the constitutional principles invoked were of commanding importance, and, if sustained, destined to be applied far beyond the immediate analogies of the present case. The opinion of the court, unanimous with a single exception, and that of its weakest member, was pronounced by Chief Justice Marshall, at the term for 1819, declaring the acts of the legislature of New Hampshire unconstitutional, and reversing the decision of the court below. By this decision, the law of the land in reference to collegiate charters was firmly established. Henceforward our colleges and universities and their trustees, unless provision to the contrary is made by their acts of incorporation, stand upon the broad basis of common right and justice, holding their property and their franchises, in like manner as individuals, by a legal tenure, not subject to control or interference, on the part of the local legislatures, on the vague ground that public institutions are subject to the discretionary authority of the government. That such is now admitted to be the law of the land, under the constitution of the United States, is owing in no small degree to the ability with which the Dartmouth college case was argued by Mr. Webster. It is but right to say that the legislature of New Hampshire made no attempt to sustain the authority of the acts in question against the decision of the supreme court. This case established Mr. Webster's reputation at the supreme court of the United States. It placed him with Emmet, Pinkney, and Wirt, in the front rank at the American bar, and, though considerably the youngest of the group, on an equality with the most distinguished of them. He was henceforward retained in almost every considerable cause argued at Washington. It would much exceed the limits of this article to dwell upon the other great causes argued by Mr. Webster before the supreme court of the United States. It will be sufficient to name the cases of Gibbons and Ogden (the great steamer monopoly case), the case of Ogden and Saunders (state insolvent laws), the Charles river bridge case, the Alabama bank case, the validity of Mr. Girard's will, and the Rhode Island charter case, which, with others of less celebrity, but almost equal importance, occupied the attention of the supreme court for an entire generation, and will form an enduring monument to Mr. Webster's reputation as a jurist. His last appearance on a very important occasion was in Jan. 1852, the last year of his life, before the circuit court of New Jersey, in the great India rubber case. In the trials of Goodridge at Newburyport, shortly after his removal to Boston, and the great *cause célèbre* of Knapp at Salem, Mr. Webster exhibited skill as a criminal lawyer, which has never been surpassed at the tribunals of any country. His argument in the latter case contains a passage of terrific force on the power of conscience.—The single occasion on which, for 7 years after his removal to Boston, Mr. Webster acted in a political capacity, was in 1820, as a member of the convention assembled in Massachusetts to revise the constitution of that state after the separation of Maine. Of this dignified body, consisting of a large number of those most respectable in the state for character and influence, with the venerable John Adams, then 85 years of age, at their head, Mr. Webster was unquestionably the ablest member. The principal subjects on which he spoke at length were oaths of office, the basis of senatorial representation, and the independence of the judiciary. Reports of these speeches are contained in the collection of his works, and they will be found replete with luminous views forcibly stated on those important topics. With the exception of about 10 days' service as a member of the house of representatives of Massachusetts, this convention was the only political assembly of which Mr. Webster was ever a member either in that state or in New Hampshire. His political life was wholly passed at Washington, as a member of congress or of the cabinet. During the session of the Massachusetts convention, Mr. Webster pronounced, on Dec. 22, 1820, his celebrated discourse at Plymouth, on the anniversary of the landing of the pilgrim fathers. This was the first of a series of performances, aside from the efforts of the senate and the bar, by which Mr. Webster placed himself at the head of American orators. The other addresses of this class were his orations at the laying of the corner stone of the Bunker hill monument in June, 1825, and at the completion of that structure in June, 1843; the eulogy on Adams and Jefferson, who died simultaneously on July 4, 1826, the 50th anniversary of the great event with which their names are jointly and for all time so honorably associated; and his discourse on laying the corner stone of the extension of the capitol in 1851. These great orations belong to a department of eloquence which is neither parliamentary, forensic, nor academical, and which may properly enough be termed the patriotic. They differ from the parliamentary and the forensic in the nature of the occasions which call them forth and in admitting more elaborate preparation, and from the academical class in going beyond the circle of literary disquisition. A highly cultivated public taste would not admit, in a formal discourse on a patriotic anniversary, those marks of extemporaneous execution which it not only tolerates but requires in the senate and at the bar. Most of Mr. Webster's discourses of the class referred to, while they are wholly free from scholastic formality, exhibit the graceful finish of a mature preparation, and may be regarded as models of this kind of composition.—In the autumn of 1822 Mr. Webster was elected a member of the national house of representatives for the city (then town) of Boston. The old division of federal and democratic parties had been nearly obliterated, and Mr. Webster received a very large vote over the opposing candidate. The congressional elections in Massachusetts being held a year or two in advance, he did not take his seat as a member of the 18th congress till December of the following year. Early in the session he made his famous speech on the Greek revolution. President Monroe had called the attention of congress to this most interesting struggle, and Mr. Webster made it the subject of a resolution. In his speech he treated what he called "the great question of the day, the question between absolute and regulated governments." He engaged in a searching criticism of the doctrines of the "holy alliance," and maintained the duty of the United States, as a great free power, to protest against them. That speech remains to this day the ablest and most effective remonstrance against the principles of the alliance of the military powers of continental Europe. Mr. Jeremiah Mason, a competent judge, pronounced it "the best sample of parliamentary eloquence and statesmanlike reasoning that our country had ever seen." The subject of the tariff was discussed at this session, and Mr. Webster opposed an extravagant increase of protective duties. Filling the important place of chairman of the judiciary committee, he reported and carried through the house a complete revision of the criminal law of the United States. The second session of the 18th congress is memorable for the election of Mr. John Quincy Adams as president of the United States by the house of representatives, in the failure of a popular choice. The other candidates were General Jackson, who had 99 electoral votes, and Mr. Crawford, who had 41. Mr. Clay had received 37, but not being one of the three highest candidates, his name did not come before the house of representatives. The vote of Massachusetts was of course given for Mr. Adams, and it is understood that Mr. Webster's personal influence was exerted with great effect over hesitating representatives from some other states. Mr. Webster, as long as he remained a member of the house of representatives, was the leader of the friends of the administration in that body. The principal subject discussed in the first session of the 19th congress was the proposed diplomatic congress at Panama, which was vigorously attacked in both houses. Mr. Webster's speech raised the subject from the level of contentious party politics to the height of international statesmanship. The congress, however, was a measure of which the beneficial effect was necessarily much impaired by the tone and temper of the speeches in which it was opposed, and, though nominally carried through, failed to exert any important influence over our relations with the Spanish American republics.—The following year Mr. Webster was elected by the legislature of Massachusetts to the senate of the United States, as the successor to Mr. Mills of Northampton, who was compelled by declining health to vacate his seat. The principal topic at the first session of the 20th congress was the revision of the tariff. This measure had its origin in the distressed condition of the woollen interest, which found itself deprived, by the repeal of the duty on foreign wool imported into Great Britain, of the moderate measure of protection accorded to it by the tariff of 1824. A bill for the relief of that single interest was attempted in the 19th congress, but wholly failed. Political considerations interfered with the equitable adjustments attempted in a general bill in the 20th congress. Those who opposed the whole system, by uniting their votes with the friends or enemies of particular provisions or proposed amendments, were able to carry or defeat them at pleasure; and this power was exercised, not to perfect the bill, but to make it as objectionable as possible to that portion of its friends whom it was the political interest of the party opposed to the administration to injure, viz., the eastern manufacturers. Mr. Webster, in an elaborate argument, exposed this course of procedure; but deeming the woollen interest fairly entitled to the favor accorded to all the other branches of domestic industry; that a moderate protective system had now become the settled policy of the country; and that the capital invested in manufactures was far too considerable to be exposed to the caprices of the foreign market, fraudulent invoices, and the competition of foreign labor working on starvation wages, he gave his vote for the bill. He was accused of inconsistency for so doing, and by none more loudly than by the friends of Mr. Calhoun, who, as has been stated, was one of those influential southern statesmen that laid the foundations of an effective system of protection in the 14th congress. If Mr. Webster's speech in support of the bill in question is carefully compared with that made by him in 1824 against the tariff of that year, it will be found that there is no further difference between them than that which was necessarily caused by the altered condition of the country in respect to manufactures, the growth of public opinion on this subject, and the course pursued in reference to the details of the bill by those opposed to it *in toto*. It is a sufficient proof of this, that, in the first collective edition of Mr. Webster's works, the two speeches were placed by him side by side, for more easy comparison. In the interval between the two sessions of congress, the presidential election took place. The candidates were Mr. Adams and Gen. Jackson, and the latter was elected by a large popular majority, embracing all the elements of opposition to the administration. The first session of the 21st congress was signalized by the famous debate on Foot's resolution. This resolution related to the survey of the public lands, and, in the intention of the mover, a senator of Connecticut (father of the distinguished naval officer of that name), had no reference to political agitation. The debate to which it gave rise gradually assumed the character of partisan warfare, and mainly related to the newly promulgated doctrines of the school of Mr. Calhoun, on the right of an individual state to nullify an act of congress. Two speeches were made by Mr. Webster, of which the second, pronounced on Jan. 26 and 27, 1830, is the most celebrated of his parliamentary efforts, probably the most celebrated speech ever delivered in congress. In Col. Benton's "Thirty Years' View," this speech is spoken of as an attack by Mr. Webster nominally on Mr. Hayne, but really on Mr. Calhoun, who filled the chair of the senate as vice-president of the United States. It is, however, a complete inversion of the facts of the case to represent Mr. Webster in any respect as the aggressor in this memorable debate. His first speech was an entirely unpremeditated reply to the first of Mr. Hayne, who endeavored in an elaborate argument to prove that New England had always pursued an unfriendly course toward the western states. Mr. Benton followed Mr. Webster, and Mr. Hayne then claimed the right of rejoinder. His second speech was still more strongly marked with bitterness toward the eastern states, and bordered on the offensive toward Mr. Webster. He also reaffirmed, with great emphasis, the doctrine of nullification. This speech occupied a part of one day and the whole of the next. Mr. 'Webster commenced his reply the next day, and completed it the day after. He had a threefold task to perform: first, to repel the personalities toward himself which formed a very prominent part of Mr. Hayne's speech, and which was done by a few retaliatory strokes, in which the keenest sarcasm was so mingled with unaffected good humor and manly expostulation as to command the sympathy of the audience; secondly, to vindicate the eastern states in general, and Massachusetts in particular, which was done with the utmost spirit and effect; and lastly, and what Mr. Webster deemed by far the most important object, to overthrow the doctrine of nullification, as held and expounded by the South Carolina school. The senate chamber was crowded to its utmost capacity on both days, and certainly a more brilliant parliamentary success was never achieved. At the close of the second day Mr. Hayne attempted a reply. The offer of adjournment was immediately made for his accommodation, but declined. He spoke for about half an hour, principally in answer to Mr. Webster's constitutional argument, and reaffirming the South Carolina theory. This short speech, as reported, filled 19 columns in the public journals! Mr. Webster in turn made a brief rejoinder. "The gentleman," he began, "has in vain attempted to reconstruct his shattered argument;" and this formidable exordium was followed up with a brief recapitulation of his own argument, which for condensation and force may be quoted as a specimen of parliamentary logic never surpassed. He spoke for about 20 minutes, and ex-President Adams, who had been listening with delight to the masterly effort of the day, exclaimed as he left the senate chamber, in allusion to the completeness of the victory: "Sunk to the bottom!" The speech was more widely circulated throughout the country than any that had ever before been made, and except in South Carolina was universally considered as having given the *coup de grâce* to the doctrine that it is competent for an individual state to annul an act of congress. It would far exceed the limits of this article to relate in detail the incidents of Mr. Webster's parliamentary career from this time to the accession of Gen. Harrison to the presidency in 1841. The most important questions followed each other in rapid succession. The principal occurrences were the breaking up of the combinations which had borne Gen. Jackson into the presidency; the rejection of Mr. Van Buren's nomination as minister to England by the united vote of Messrs. Webster, Clay, and Calhoun, and their friends; the bill to recharter the bank of the United States, and its veto by President Jackson; the ordinance of nullification adopted by South Carolina; the force bill in congress; the compromise tariff of Mr. Clay; the removal of the public deposits from the bank of the United States and their distribution among the local banks; the resolution of the senate disapproving of that measure, and the message from the president protesting against the resolution; the expunging resolution; the election of Mr. Van Buren to the presidency; the financial crisis of 1837, and the extra session of congress occasioned by it, with the new government plan of finance. These events furnished the topics of a series of debates in the senate of the United States of the most stirring character, in all of which Mr. Webster took a leading part. The last of these debates was on what was called the "sub-treasury" system of the administration. Mr. Webster's argument on that subject was the most elaborate and effective of his speeches on the currency. Not long after its publication, Mr. S. Jones Loyd, now Lord Overstone, the highest authority in England on financial questions, was examined upon the subject of the bank and the currency before a committee of the house of commons. He produced before the committee a copy of the speech of Mr. Webster, and pronounced it one of the ablest and most satisfactory discussions of those subjects which he had seen.—In the spring of 1839 Mr. Webster crossed the Atlantic and made a hasty tour in England, Scotland, and France. Returning in the early winter to the United States, he yielded the most efficient aid in bringing about the great political change which was consummated in the election of Gen. Harrison to the presidency. His own name had been prominently brought forward as the candidate for the vice-presidency, but, in conformity with the almost invariable usage of the political parties, it was deemed expedient that the candidates for the two offices should not be from the same section of the Union. On this ground Mr. Webster withdrew his name, and that of Mr. Tyler was substituted. Gen. Harrison, as soon as it was ascertained that he was elected, offered to Mr. Webster the choice of places in his cabinet. The sufferings and wishes of the country in reference to its great financial interests having led to the political revolution, the powerful agency of Mr. Webster in bringing it about led Gen. Harrison to wish that he should go into the treasury. But the condition of the foreign relations of the country was extremely critical, and it was finally decided that Mr. Webster should take charge of the department of state. Gen. Harrison, it is well remembered, lived but a month after his induction into office, and his death and the succession of Mr. Tyler to the presidency menaced the harmony of the administration and finally overturned it; but no changes immediately took place. Our relations with England demanded prompt attention. The differences between the two governments relative to the north-eastern boundary, which for nearly two generations had tasked to the utmost the resources of diplomacy, the affair of the Caroline and McLeod, and the detention and search of American vessels by British cruisers on the coast of Africa, were subjects of controversy which imperatively demanded a peaceful solution. Fortunately a change of ministry took place in England in Aug. 1841, and the new administrations in both countries were able to address themselves to the difficult task of a comprehensive settlement, unembarrassed by previous committals. Lord Ashburton was sent as a special envoy to the United States, and brought with him a friendly and candid disposition. Mr. Webster met him in the same temper, and in a few months a convention was agreed upon equally advantageous and honorable to both parties. That it is entitled to this character is apparent, on the face of the instrument, to every candid person acquainted with the merits of the questions disposed of, and is further shown by the comments of the opposition in both countries. In the English parliament "Lord Ashburton's capitulation" was the subject of the severest censure; while in the senate of the United States Mr. Webster was denounced with equal bitterness for having, on every point, been overreached by Lord Ashburton. A futile attempt was made by the pamphleteers and partisan journals in London to convict Mr. Webster of "perfidy and want of faith," on the ground of the pretended concealment of the famous "red line map," and this ridiculous charge has lately been revived. Sir Robert Peel expressly negatived it at the time as "wholly unjust," and pronounced Mr. Webster "a gentleman of worth and honor." Neither did Lord Palmerston, the leader of the opposition, in his very able speech against the treaty, give any countenance to the charge, feeling no doubt its injustice.—Mr. Webster retired from the administration of Mr. Tyler in the spring of 1843, the other members of the cabinet having resigned their places in the course of the preceding summer. Hard thoughts were entertained of Mr. Webster in some quarters, for continuing to hold his seat after the resignation of his colleagues. But as Mr. Tyler had in no degree withdrawn his confidence from him in reference to the foreign affairs of the country, nor attempted to overrule him in the administration of his department, he conceived that the public interests dependent upon his continuing in office were too important to be sacrificed to punctilio. His own sense of duty in this respect was confirmed by the unanimous advice of the Massachusetts delegation in congress, and that of judicious friends in all parts of the country. He remained in private life during the residue of Mr. Tyler's administration, for the first time for 20 years, occupied more than ever with professional duties, and enjoying at the appropriate seasons the retirement of his farms. In the autumn of 1844 he took the field with earnestness in support of Mr. Clay's nomination to the presidency. The annexation of Texas was the question at issue in the result of the election, and was decided in favor of that measure by the election of Mr. Polk. At the first session of the 29th congress (Dec. 1845) Mr. Webster took his seat in the senate of the United States, as the successor of Mr. Choate. The annexation of Texas was the first subject of discussion. The attempt to accomplish that measure by treaty having failed, and a joint resolution consenting to it having been passed at the close of the last congress, it was now to be consummated by another joint resolution admitting the state into the Union. Deeming this mode of attaining the object, in itself of questionable expediency, plainly unconstitutional, Mr. Webster opposed it. The certainty that it would cause a war with Mexico had prevented Gen. Jackson and Mr. Van Buren from favoring the measure, and was of course a strong additional objection. But, although decidedly opposed to the course pursued by the administration, Mr. Webster thought it his duty, after the war was actually commenced, not to withhold the supplies which were required for the sustenance and reënforcement of our troops. His second son, Edward Webster, a young man of bright promise, obtained a major's commission in Gen. Scott's army, and fell a victim in the city of Mexico to the climate and the hardships of the service. The Oregon boundary question was settled at this time, and Mr. Webster, though holding no office in the executive department of the government, was able, through private channels of influence in England, to contribute materially to this result. In the spring of 1847 he set out upon a visit to the southern states, where he was uniformly received with cordiality, especially at Charleston, Columbia, Augusta, and Savannah. At the last named place he was threatened with severe illness, and obliged to abandon the further prosecution of his projected tour. In the course of this year the Mexican war was brought to a triumphant close. Mr. Webster, in common with several of the most intelligent and patriotic members of the senate, foreseeing that the territory acquired by the treaty of Gaudalupe Hidalgo would prove a Pandora's box of evil to the country, voted against its confirmation. The discovery of gold in California gave a powerful impulse to immigration into the newly acquired territory, and the house of representatives passed a bill for its political organization, containing the anti-slavery proviso of the ordinance of 1787. The bill with this feature failed to pass the senate, and nothing was done at that session of congress for the organization and government of California. All attempts to attain this object by specific legislation failed at the ensuing session of congress, and it was only effected partially and incidentally by the parliamentary skill and influence of Mr. Webster, exerted in the last disorderly hours of the session. The Mexican war had no doubt been undertaken as a measure of policy by the dominant party, but it resulted in their overthrow. The great popularity of Gen. Taylor led to his nomination as the candidate of the whig party at the ensuing presidential election. The friends of Mr. Webster had calculated, with some confidence, that the choice of the nominating convention would fall upon him; but the prestige of military success proved too strong for claims resting exclusively on civic qualifications. Some disappointment at this preference was no doubt felt by those who, apart from personal considerations, disapproved the selection of a candidate mainly on account of availability; but general confidence was reposed in the sound constitutional principles, well known prudence, and sterling worth of Gen. Taylor, and nothing occurred to prevent Mr. Webster and his friends from giving a cordial support to his administration. It encountered formidable difficulties at the outset. The sectional controversies relative to slavery had become violent beyond former example, in consequence of the recent territorial acquisitions. California, having, without previous congressional sanction, adopted a constitution by which slavery was prohibited, was applying for admission to the Union; New Mexico was to be organized as a territory; a claim was set up by her neighbor Texas to an extensive region on her border; while at this inauspicious season a more stringent law for the extradition of fugitive slaves was demanded by the South. The excitement in congress and through the country had reached a dangerous height, and a national crisis seemed to be impending. A series of compromise measures was brought forward and at length adopted in congress, by which the threatened catastrophe was for the time averted. In the progress of the senatorial debates on these subjects, Mr. Webster delivered his celebrated speech of the 7th of March, 1850. The grounds taken by him in this important speech, in reference to the principal matters in controversy, were the following: the unconditional admission of California into the Union as a state, with a constitution prohibiting slavery; a pecuniary indemnity to Texas ($10,000,000) for waiving her claim to the region in dispute; the adoption of the fugitive slave law, with an amendment providing for a jury trial; and the organization of the newly acquired territories without the Wilmot proviso. Although approving the proviso when brought forward by anticipation in 1847, Mr. Webster was willing that, in a general system of compromises, its application should be waived, inasmuch as the subject matter had been satisfactorily disposed of in California by her admission into the Union with an anti-slavery constitution, and in Texas by the application of the Missouri compromise; while in New Mexico the laws of nature forbade the introduction of slavery, an inference from her climate and geographical condition fully confirmed by 12 years' experience. In making this last appeal for conciliation, he was not without melancholy forebodings of its failure to unite even the unanimous suffrage of his political friends. His own description of his feelings at the time was, "that he had made up his mind to embark alone on what he was well aware would prove a stormy sea, because in that case, should final disaster come, there would be but one life lost."—While the compromise measures were still before congress, about midsummer of 1850, President Taylor died. In the reorganization of the cabinet by Vice-President Fillmore, who succeeded to the office of the deceased president, Mr. Webster was called to the department of state. The movements of the fillibusters against Cuba, successful attempts in different parts of the country to resist the execution of the fugitive slave law, the arrival in America of Kossuth and the other Hungarian exiles, the apprehensions of a collision with the British cruisers on the fishing grounds, the affair of the Crescent City at Havana, the misunderstanding with Peru relative to the Lobos islands, the Japanese expeditions, the proposed tripartite guaranty of Cuba, the reciprocity treaty relative to the Canadian provinces, and the affairs of Central America were the subjects which engaged the attention of Mr. Fillmore's administration while Mr. Webster remained in charge of the department of state. On July 4, 1851, he delivered a magnificent address at the laying of the corner stone of the extension of the capitol. This was his last discourse of this kind. In Jan. 1852, he argued the important India rubber patent cause at Trenton. This was his last great forensic effort. In the spring of that year a convention assembled at Baltimore to nominate a candidate for the presidency. Sanguine hopes were entertained by the friends of Mr. Webster that his distinguished career would be closed with the well earned recognition of his talents and services; but the choice of the convention fell upon Gen. Scott. Early in May Mr. Webster was seriously injured by being thrown from his carriage near his farm in Marshfield. In June he went back for a short time to Washington, but the state of his health required, in addition to a cooler climate, the repose and freedom from care which he could only find at home. He made, however, another short visit to Washington in the month of August, when he left it for the last time. The few closing months of his life were passed at Marshfield. The last matter of public business which engaged much of his attention, was the affair of the American fisheries off the coasts of the British provinces. After his final return from Washington chronic complaints gained rapidly upon him. Sensible that his failing health did not admit the punctual discharge of the duties of his office, he tendered his resignation to the president, which, in the hope that he might yet regain his strength, was feelingly declined by Mr. Fillmore. His last visit to Boston was on Sept. 20, when he went to dine with Mr. Thomas Baring of London at the house of Mr. Thomas Ward. His funeral was attended at Marshfield in the presence of a great part of the population of that place and the neighboring towns, of a large number of persons from Boston and other parts of Massachusetts, and of deputations from New York, Albany, and Philadelphia. It was a bright autumnal day; the body, placed in the coffin and in his accustomed dress, lay beneath a noble elm tree in front of his dwelling, and after the performance of the funeral services was followed to the tomb in the ancient cemetery of Marshfield, where the members of his family already deceased had been deposited by himself. At the ensuing session of congress the customay tributes of respect were paid to his memory, with more than usual eloquence, feeling, and concert of sentiment on all sides of the house; in the senate by his former colleague Mr. John Davis of Massachusetts, Judge Butler of South Carolina, Gen. Cass, Mr. Seward, and Commodore Stockton; and in the house of representatives by Mr. G. T. Davis of Massachusetts, Mr. Appleton of Maine, Mr. Preston of Kentucky, Mr. Seymour of New York, Mr. Chandler of Pennsylvania, Gen. Bayly of Virginia, and Mr. Stanly of North Carolina. Notice of his death was taken by the courts and other public bodies with which he was connected in Massachusetts; a eulogy was pronounced by Mr. George S. Hillard, under the auspices of the municipal authorities of Boston; and funeral orations, discourses, and sermons were delivered throughout the country, in greater numbers, it is believed, than on any former occasion excepting the death of Washington.—Mr. Webster's person was imposing, of commanding height and well proportioned; his head of great size; the eye deep-seated, large, and lustrous; his voice powerful, sonorous, and flexible; his action, without being remarkably graceful, appropriate and impressive. In debate no amount or violence of opposition ever shook his self-possession for a moment. A consummate master of argument, he touched not less skilfully all the chords of feeling. On occasions of mere ceremony he did not greatly shine; on great occasions and great subjects, with or without preparation, he had no superior. Others excelled him in the dexterity of party leadership and the exertion of outdoor influence; no one excelled him in the ability to convince and persuade an intelligent audience. For his arguments at the bar and his speeches in congress he prepared a full brief, but wrote nothing at length. The style of his compositions of every kind, alike his elaborate discourses, diplomatic papers, and familiar letters, is vigorous, terse, pure English, free from every species of affectation, and marked by a manly simplicity. The late Mr. Samuel Rogers, a remarkably fastidious judge, told the writer of this article, that he knew nothing in the English language so well written as Mr. Webster's letter to Lord Ashburton on the subject of the impressment of seamen.—He went to bed and rose early, and despatched the business of the day as much as possible in the morning hours. He was extremely fond of field sports, particularly fishing, and was a remarkably good shot. His social tastes were strong, and his conversational powers rarely equalled. His happiest days were passed upon his farms. He understood agriculture theoretically and practically, and took great pride in his fine stock and large crops. He was a regular attendant on public worship, a diligent student of the Scriptures, a communicating member of the church, and a firm believer in the truth of Christianity as a divine revelation. A brief and carefully prepared declaration of his faith was drawn up by him in the last year of his life. Portraits at different periods of his life by the most distinguished artists of the day, and his magnificent bust by Powers, will convey to posterity no inadequate idea of his countenance and form; while his character as a statesman, a jurist, and an orator will fill an abiding place in the annals of his country. Mr. Webster was married in early life to Grace Fletcher of Hopkinton, N. H. Of this marriage were born Charles, Julia, Edward, and Fletcher, of whom the last, the only one who survived him, fell as colonel of the 12th Massachusetts volunteers in the battle of Aug. 29, 1862, near Bull run. The death of Mr. Webster's first wife took place in Jan. 1828. His second wife, Caroline Bayard Le Roy, daughter of the eminent merchant of that name in New York, survives him. Several editions of his collective works were published during his lifetime; the most complete in 6 vols. 8vo. in 1851. Two volumes of his private correspondence were published by his son in 1858.

WEBSTER, Ebenezer, an American patriot, the father of Daniel Webster, born in Kingston, N. H., in 1739, died in Franklin, N. H., in 1806. In his youth he served under Gen. Amherst in the "old French war," and in 1761 was one of the original settlers of that part of the town of Salisbury now known as Franklin. "When he had built his log cabin," says his son Daniel, "and lighted his fire, his smoke ascended nearer to the north star than that of any other of his majesty's New England subjects." He united, as was common at the time, the occupations of farmer and innkeeper, took an active part in public matters, and at the outbreak of the revolution led the Salisbury militia to Cambridge. Subsequently he fought at White Plains and Bennington, was at West Point during the treason of Arnold, and served in other campaigns until the close of the war, when he had attained the rank of colonel of militia. He was at various times a member of both branches of the legislature, and in 1791 was appointed judge of the court of common pleas, which office he retained at the time of his death. He was a man of great probity, and in personal appearance resembled his son Daniel, being of a large and vigorous frame, with a swarthy complexion and dark piercing eyes.—Ezekiel, eldest son of the preceding by his second wife, born in that part of the town of Salisbury, N. H., now known as Franklin, March 11, 1780, died in Concord, N. H., April 10, 1829. He was graduated at Dartmouth college in 1804, studied law, and rose to great eminence in his profession. He also served in the state legislature. He died instantaneously of disease of the heart while trying a cause in the court house at Concord. He possessed great abilities, and was said by his brother Daniel to be the handsomest man he ever saw.

WEBSTER, John, an English dramatist, flourished in the latter part of the 16th and the first half of the 17th century. Neither the date nor place of his birth is known, nor are there any important facts of his career, unconnected with his works, which are well authenticated. He was a friend and contemporary of Dekker, Drayton, Middleton, and other dramatists, with several of whom, particularly Dekker, he was jointly engaged in the production of plays. His own dramas comprise, among others, "The White Devil" (1612), and the "Duchess of Malfi" (1623), works written with great power, but too sanguinary to be palatable to modern readers. In the latter play, it has been said, scarcely enough are left upon the stage at the close to bury the dead. His works were collected and edited by the Rev. A. Dyce (4 vols., London, 1830).

WEBSTER, Noah, LL.D., an American author and philologist, born in that part of Hartford, Conn., now forming the town of West Hartford, Oct. 16, 1758, died in New Haven, Conn., May 28, 1843. He entered Yale college in 1774, served under his father, a captain in the militia, during the campaign of 1777, and was graduated in 1778, at the same time with Joel Barlow, Oliver Wolcott, Zephaniah Swift, and several others who afterward gained distinction. Mr. Webster became a school teacher in Hartford, at the same time studying law, and was admitted to the bar in 1781, but did not at that time engage in practice. In 1782 he opened a classical school at Goshen, Orange co., N. Y., and there formed the design of preparing some school books. Having made the first draft of an elementary treatise, he visited Philadelphia in the autumn, and submitted his plan to Mr. Madison and others, who encouraged him to proceed with it. He accordingly published at Hartford in 1783 his "First Part of a Grammatical Institute of the English Language," which was followed in the course of the next two years by the second and third parts. This "First Part" was the basis of the spelling books which he afterward published. About the same time he undertook the publication of "Governor Winthrop's Journal," which had till then remained in manuscript. He also entered upon the discussion of matters of national policy, his first essay being the vindication, in a series of papers in the "Connecticut Courant," of the action of congress in granting full pay to the army for 5 years beyond their term of service, for which he received public thanks from Governor Trumbull. In 1785 he published a pamphlet, entitled "Sketches of American Policy," in which he asserted, for the first time in the public press, the necessity, and foreshadowed the character, of a new constitution of the United States. The same year he made a visit to the southern states, to procure the enactment of state copyright laws, the confederation not possessing the requisite power. In 1786 he delivered a course of lectures in the principal American cities on the English language, which were published in 1789, under the title of "Dissertations on the English Language." In the following year he became principal of an academy in Philadelphia; and when the labors of the constitutional convention were closed, he wrote by request of one of its members a pamphlet entitled "Examination of the Leading Principles of the Federal Constitution." In 1788 he attempted the establishment of a periodical in New York, and published for one year, but at a heavy loss, the "American Magazine." He returned to Hartford in 1789, and commenced the practice of the law under favorable circumstances. For some years his business continued increasingly large and profitable; but in the autumn of 1793, at the earnest solicitation of friends of the administration, then imperilled by the decided ground it had taken in repressing active sympathy with the French revolution, he established for its support a daily newspaper in the city of New York, under the title of "The Minerva," to which he added soon after a semi-weekly, made up from the columns of the daily, called "The Herald." These names were subsequently changed for those of the "Commercial Advertiser" and "New York Spectator." To this journal he contributed a series of able papers under the signature of "Curtius," in defence of Jay's treaty with Great Britain in 1795, which did much to allay the violent opposition to that treaty. During this period, in consequence of the prevalence of yellow fever, he investigated the history of pestilential diseases in all parts of the world, and published "A Brief History of Epidemics and Pestilential Diseases" (2 vols. 8vo., Hartford, 1799). He had removed to New Haven in 1798, having resigned the editorial charge of his journal, though he retained the proprietorship for several years longer. In 1802 he published a work on the rights of neutral nations in time of war, and a compilation of "Historical Notices of the Origin and State of Banking Institutions and Insurance Offices;" and in 1807 his "Philosophical and Practical Grammar of the English Language." In the latter year he commenced the great work of his life, the "American Dictionary of the English Language," which had occupied his thoughts for many years. He had already published in 1806 a "Compendious Dictionary," compiled from some of the existing works, but with the addition of many new words and definitions. At the outset he had, as he himself states, no design of preparing an original work. He saw that the existing dictionaries had omitted many words in common use, that their definitions were incomplete and often inexact, and that they were defective in their lack of the technical words which had been introduced in the progress of science; and he proposed to compile from them all, and from other sources which were open to him, a work which should better supply the wants of the public. He had, however, proceeded no further than the second letter of the alphabet, when he found himself seriously embarrassed for want of a knowledge of the origin of words, which was not to be obtained from any existing dictionary. At this stage he laid aside his work, and spent 10 years in an inquiry into the origin of our language and its connection with those of other countries. He examined in the course of this investigation the vocabularies of 20 of the principal languages of the world, and prepared a "Synopsis of Words in Twenty Languages," which still remains in manuscript. He then commenced anew his dictionary, and having in about 7 years more brought it nearly to a close, he sailed for Europe in June, 1824, for the purpose of consulting literary men there, and examining some standard authorities to which he could not obtain access in this country. After spending two months in Paris, examining rare works in the royal library, he went to England, and, in a residence of 8 months at the university of Cambridge, during which he availed himself of the advantages of its libraries and intercourse with its most eminent philologists, he completed the dictionary. At the close of the year 1828 an edition of 2,500 copies was published in the United States, in 2 vols. 4to., followed by one of 3,000 in England. In 1840 a second edition of 3,000 copies was published, in 2 vols. royal 8vo. In the interval a number of editions of the dictionary, abridged to a greater or less degree, had been prepared either by Mr. Webster or members of his family. During the period in which he was preparing his great work, he removed his residence to Amherst, Mass., and was one of the most active founders and promoters of Amherst college, and for several years president of its board of trustees. He also represented the town for several years in the legislature. In New Haven he had been repeatedly a member of the legislature of the state, a judge of one of the state courts, and one of the aldermen of the city. He returned to New Haven in 1822, and in 1823 received from Yale college the degree of LL.D. The latter years of Dr. Webster's life were spent in lighter literary labors, and the revision of some of his earlier works. In the beginning of 1843 he published "A Collection of Papers on Political, Literary, and Moral Subjects," which included the more important of his political essays, and an elaborate treatise "On the supposed Change in the Temperature of Winter," which he had read before the Connecticut academy of sciences 44 years before. His last literary labor was the revision of the appendix to his dictionary, which he completed only a few days before his death.—The philological works of Dr. Webster have had a larger sale than was ever attained by those of any other author. Of the "Elementary Spelling Book," in its various editions and revisions, not fewer than 41,000,000 copies had been sold down to Jan. 1862; and during the preparation of the dictionary the entire support of his family was derived from his copyright on this work. The "American Dictionary" was revised soon after Dr. Webster's death, by his son-in-law Prof. Chauncey A. Goodrich, and republished in one quarto volume in 1847, and of this edition a very large number have been sold both in England and America. There are also 6 smaller editions. Of the spelling book the annual sale for some years has been about 1,200,000 copies, and of the dictionaries over 300,000 copies. Beside the works named above, Dr. Webster published in early life a "History of the United States," which he revised about 1838, and which had a considerable sale; "Letters to a Young Gentleman commencing his Education" (8vo., New Haven, 1823); "Manual of Useful Studies" (New Haven, 1832); "The Prompter;" and a "History of Animals."

WEBSTER, Thomas, an English painter, born in London, March 20, 1800. He became a student of the royal academy in 1820, and since 1825, when he gained the first prize for painting, has been a regular contributor to its annual exhibitions. In 1841 he was elected an associate, and in 1846 an academician. He is essentially a painter of *genre*, and is well known by his pictures of children and of school life. Among the best of these are his "Smile" and "Frown," which have been engraved, "Going to School," "See-Saw," and "Slide." The national collection contains his "Truant," "Dame's School," "Village Choir," and "Sickness and Health."

WEDDERBURN, Alexander, Baron Loughborough and earl of Rosslyn, a British jurist and statesman, born in Edinburgh, Feb. 13, 1733, died in Bayles, Berkshire, Jan. 3, 1805. He was admitted to the bar at the age of 19, and was rapidly rising when a rebuke from one of the judges made him so indignant that he removed to London, and in 1753 became a member of the Inner Temple. In 1757 he was called to the English bar, and rapidly gained a high reputation, especially in pleading the great Douglas case in 1768–'9. He obtained a seat in parliament, and on Jan. 26, 1771, was appointed solicitor-general in the ministry of Lord North, in which office he was conspicuous for his defence of Lord Clive when accused of maladministration of affairs in India. In Jan. 1774, when the petition of Massachusetts for the removal of Hutchinson and Oliver was laid before the privy council, Wedderburn defended those functionaries in a speech in which he made a gross and insulting attack upon Franklin, the agent of the petitioners, whom he stigmatized as "a true incendiary." He was violently opposed to the claims of the Americans, and was a strong support to the ministry of Lord North during the revolutionary war. In 1778 he was made attorney-general, and in 1780 chief justice of the court of common pleas, when he was raised to the peerage as Lord Loughborough, baron of Loughborough in the county of Leicester. In April, 1783, he assisted North in forming the famous coalition ministry, in which he was appointed first commissioner of the great seal; and after its dissolution he remained out of office until Jan. 27, 1793, when he became lord high chancellor under Mr. Pitt. On his resignation of that office in April, 1801, he was created earl of Rosslyn in the county of Mid-Lothian. When George III. heard that he was dead, he remarked: "He has not left a greater knave behind him in my dominions." Wedderburn published in 1793 a treatise on the management of prisons, and afterward a treatise on the English poor laws.

WEDDING and WEDLOCK. See Bride and Bridegroom, Marriage, and Husband and Wife.

WEDGE. See Mechanics.

WEDGWOOD, Josiah, an English manufacturer of pottery, born in Burslem, Staffordshire, July 12, 1730, died in Etruria, near Newcastle-under-Lyme, Jan. 3, 1795. He received a very limited education, and at about the age of 10 was employed to work at the wheel in his brother's pottery in Burslem, where his father and others of his family were engaged in the same business. Establishing himself at this place as a potter in 1759, he entered upon the manufacture of ornamental pottery, a branch of the business then undeveloped in England, and first brought himself into notice by the production of a peculiar cream-colored ware, some specimens of which were presented by him to Queen Charlotte, who expressed her approval by ordering a complete table service, and appointing Wedgwood her potter. Thus originated the well known "queen's ware," which still retains its celebrity. He next opened a warehouse in London, and within a few years produced numerous beautiful and exact imitations of antique sculpture and vases, cameos, intaglios, medallions, seals, and similiar objects, which gained him an extended reputation. He became a competitor for the Barberini vase at the time of its purchase at public auction by the duchess of Portland, and only relinquished his bids upon receiving permission to make copies of it in porcelain. Fifty of these were executed by the ingenious workmen in his employ, and sold at 50 guineas each, which, it is said, did not compensate him for the outlay. Beside copies of the antique, he introduced many original and beautiful designs, some of which were made by Flaxman, and succeeded in producing works of such delicacy of form and execution as to elevate British pottery, previously noted only for its tasteless designs and coarse workmanship, to the dignity of a fine art. He devoted much time to experimenting with various kinds of clay and coloring substances, and some of his pottery has shown so remarkable a resistance to the ordinary causes of destruction or injury as to render it invaluable in conducting chemical experiments. His prosperity kept pace with the increase of his reputation, and as early as 1771 he removed his factories to Etruria, a village near Newcastle-under-Lyme, erected by himself, and where he built a handsome seat. Wedgwood was also distinguished for his public spirit, and aided in the construction of the Trent and Mersey canal and other public improvements. He repaired the deficiencies of his early education by private reading, cultivated natural philosophy with great ability, and contributed papers to the "Transactions" of the royal society, of which he was a fellow. His private character was most exemplary, and he dispensed his large fortune in princely acts of beneficence. To his efforts chiefly are due the establishment and development of the British potteries, now an important source of national wealth; and such was the reputation which his ware acquired, that five sixths of the annual production of his factories was exported, notwithstanding the heavy duties imposed by many foreign states on British earthenware.

WEDNESDAY (Anglo-Sax. *Wodnesdæg;* Swed. *Odensdag* or *Onsdag*), the fourth day of the week, named from Woden or Odin, the Scandinavian All-father, to whom it was sacred. It is the *Mercurii dies* of the Roman calendar.

WEED, Thurlow, an American journalist, born at Cairo, Greene co., N. Y., Nov. 15, 1797. At the age of 10 years he was employed as cabin boy upon Hudson river craft, and about two years later entered the printing office of Mr. Machy Croswell in the village of Catskill. Soon afterward he removed with his family to the frontier village of Cincinnatus, Cortlandt co., N. Y., and for some time was employed in "backwoods" labor. In his 14th year he returned to the printing business, and was employed successively in several different newspaper offices. He was a volunteer in the war of 1812, serving on the northern frontier as a private and as quartermaster sergeant. After becoming of age he established a newspaper in his own name, and during the next 10 years edited various gazettes, the last being the "Anti-Masonic Enquirer," published in Rochester. During the anti-masonic excitement in New York in 1826-'7, he identified himself with the party opposed to the alleged influence in public affairs of the order of free and accepted masons, and on that issue he was twice elected to the lower house of the state legislature. In this capacity he was distinguished by his tact as a party manager, and his industry and sagacity in committee rooms, rather than by eminence as a debater. These talents, together with the substantial services rendered by him in 1827-'30 in securing the election of De Witt Clinton as governor, suggested him as a competent person to oppose to the so called "Albany regency," a body of democratic politicians who had the general management of that party in New York. At the expiration of his second term as a legislator in 1830, he accordingly removed to Albany, and assumed the editorship of the "Albany Evening Journal," a newspaper established in the interest of the anti-Jackson party in the state, and which under his skilful management has maintained for many years a prominent position among periodicals of its class. From 1830 to the present time he has been constantly before the public as a political leader, first of the whig and afterward of the republican party, outliving almost a generation of statesmen, with many of whom his relations were of an intimate nature, even where their political views differed widely. Within the same period scarcely a session of the legislature of his state or of the national congress has been held without his personal attendance at some stage of the proceedings in his capacity as party manager, although, in accordance with a resolve made upon assuming the control of the "Evening Journal," he has persistently declined all offers of official distinction, notwithstanding positions of power and emolument have frequently been within his reach. He took a prominent part in procuring the nominations of Gen. Harrison at the presidential conventions of 1836 and 1840, of Gen. Taylor in 1848, and of Gen. Scott in 1852, acting in each instance as an independent adviser rather than as a member of the respective conventions, a position which a strict regard to the rule of conduct which he had prescribed has never allowed him to accept. He warmly advocated the election of Mr. Fremont in 1856 and of Mr. Lincoln in 1860, although his influence had in each case been exerted in favor of the nomination of Mr. Seward. In Nov. 1861, he visited Europe at the suggestion of influential friends of the administration of President Lincoln, who thought that in a semi-diplomatic capacity he could be of service to the country in the political circles of London and Paris in respect to the delicate relations of the United States with foreign powers, arising out of the existing civil war. He returned home in June, 1862, receiving on his arrival from the corporation of New York the freedom of the city.

WEEK (Anglo-Sax. *weoc*), a period of 7 days, a division of time adopted by the ancient Egyptians and Hebrews, and in general use among Christians and Mohammedans. Its origin is referred back in the Mosaic account to the creation of the world, and there is no other record relating to it. It was not in use by the Greeks and Romans, until adopted by the latter at the period of the introduction of Christianity, after the reign of Theodosius. Its adoption was no doubt hastened by the peculiar convenience of such a division of the lunar month into 4 parts, and by its being so nearly an aliquot part of the solar year of 365 days. The only explanation of the origin of the names given to the days is that by Dion Cassius in his Roman history (book xxxvii., c. 18, 19). They were founded, he says, upon the names of the 7 planets known to the ancient Egyptian astronomers, which they arranged as follows in the order of their distances from the earth, beginning with the most distant: Saturn, Jupiter, Mars, the sun, Venus, Mercury, and the moon. According to the ancient astrology, each of these planets presided in turn over some hour of the day; and thus each day came to be named for the planet to which its first hour was dedicated. Commencing with Saturn, on the first hour of the first day, and allotting to each hour a planet in the order named, the first hour of the second day, it is found, would fall to the sun, of the third day to the moon, of the fourth to Mars, of the fifth to Mercury, of the sixth to Jupiter, and of the seventh to Venus. The Latins adopted these designations in their names of the days of the week, as *dies Saturni*, *dies Solis*, *dies Lunæ*, &c.; and modern nations have retained the same terms, those speaking languages of the Teutonic stock substituting in some cases the names of their own divinities for the corresponding ones of Roman mythology. In the ancient Brahminical astronomy, the week is also a recognized division of time, and the names of the days are from the same planets and in the same order as those in use by the ancient Egyptians; but the week began with them with *Soucravaram*, the day of Venus or Friday. The Egyptian week began, according to Dion Cassius, on Saturday. The Chinese and Thibetans have a week of 5 days, named after the 5 elements, iron, wood, water, feathers, and earth.

WEEMS, MASON L., an American clergyman and author, died in Beaufort, S. C., May 23, 1825. Of his personal history but little is known. He received a very good education, and began the study of medicine, which he designed as his vocation in life, but subsequently became a clergyman of the Protestant Episcopal church, having fitted himself for this profession in London, whither he went with some young Americans. He became the rector of Mount Vernon parish in Virginia before the revolutionary war broke out, officiating in the old Pohick church, of which Washington was an attendant. The claims of a large and increasing family obliged him to give up the pulpit, and he became a book agent for Matthew Carey, and, with his stock of works, many of which were his own, travelled through the South. There, with a wagon loaded with books and pamphlets, with a case containing a violin, and a knapsack full of sermons, he seems to have been equally successful with either, as occasion served. He wrote a number of books, which in their time were exceedingly popular, and still hold their ground as curious and interesting volumes. His "Life of Washington" was published immediately after the death of its subject, and in the second edition appeared under the title of "A History of the Life and Death, Virtues and Exploits of General George Washington, faithfully taken from authentic documents, and, now in a second edition improved, respectfully offered to the perusal of his countrymen, as also all others who wish to see human nature in its most finished form." It was dedicated to Mrs. Martha Washington, and concluded with an extravagant epitaph upon her husband and herself, which was omitted after her death. The book was at first only a short sketch of the public career of Washington, with a eulogy of his character; but as edition after edition came out, it grew in size, in patriotism, and in the marvellousness of its details. He also wrote biographies of Benjamin Franklin and of William Penn, having the same general characteristics as that of Washington. This series of biographies was completed by a "Life of General Francis Marion," for which Horry, one of the companions of that celebrated partisan officer, furnished the facts. When the book appeared, Horry was dismayed by the romantic manner in which his statements were served up, and a correspondence, since published, ensued between the two authors. With all their carelessness, and the romance in their details, Weems's histories are exceedingly entertaining. He is chiefly to be blamed for representing his heroes as unexceptionably perfect, carefully concealing or denying all their bad actions, and converting into historic realities traditionary accounts of their good ones. Beside these more elaborate works, Weems wrote a number of tracts and pamphlets, having for their subjects law, politics, and morals. One of these, entitled "Hymen's Recruiting Sergeant, or the New Matrimonial Tattoo for Old Bachelors," is still printed. He wrote also a number of tales of terror, narrating crimes in wild and unsettled parts of the South, and these sometimes exposed him to danger from the resentment of the inhabitants of the district described.

WEENIX, or WEENINX, JAN BAPTIST, called the Old, a Dutch painter, born in Amsterdam in 1621, died in Utrecht in 1660. He was instructed by Abraham Bloemart and Nicolas Mojert, and at 22 years of age visited Rome, where he acquired a reputation by his Italian seaports and landscapes with architectural accessories. The last 12 years of his life were passed in Holland. He was a rapid painter, having been known to finish 3 half-length portraits with accessories in a single day, and excelled in history, portrait, animal, landscape, and marine painting, being on the whole most distinguished in the last named department.—JAN, called the Younger, son of the preceding, born in Amsterdam in 1644, died there in 1719. He painted with great reputation landscapes, animals, flowers, and fruit, but excelled in the representation of dead game and hunting scenes. His pictures of this class are unrivalled by any productions of the Dutch school, and command large prices. He finished with extreme neatness, and exhibited a clear and brilliant coloring and a wonderful knowledge of chiaroscuro.

WEEVIL, a name applied indiscriminately to insects of the moth, fly, and beetle orders, numbering thousands of species, so that what particular insect in a given instance is meant by a writer or speaker may be a matter of the greatest uncertainty. The term is more properly restricted to the larvæ of the tetramerous beetles of the tribe *rhynchophora*, in which the front of the head is prolonged into a snout, at the end of which the mouth is placed. These insects are diurnal, slow, timid, and defenceless, and the larvæ are soft, white, and footless, with hard heads, very convex rings, and strong horny jaws; they live usually in the interior of the stem, fruit, or seeds of plants, to which they are very injurious. The grain weevil of Europe (*calandra* [*sitophilus*] *granaria*, Linn.) is one of the most mischievous; it is a slender, red beetle, about ⅛ of an inch long; the eggs are deposited in the wheat after it is stored, and the grubs as soon as hatched burrow in, each occupying a single grain and eating it so as to leave only the husks in a large heap; the destruction is usually not discovered until it is too late to remedy it. Indian corn and rice are attacked by other similar species of the genus. Drying the grain in kilns seems to be the only method of destroying these insects.—The *balaninus nucum* (Germ.) is the parent of the nut weevils, the little white grubs so often seen in filberts and other nuts in Europe. The female by her long proboscis makes a small hole in the young nut when it is soft, and therein deposits an egg, the grub eating its way to the interior and there living to maturity; it then gnaws its way out, falls to the ground, burrows, and undergoes its change to a pupa at the beginning of the next summer. To the species of our hazelnut Say gave the name of *nasicus;* it is $\frac{3}{10}$ of an inch long, dark brown with rusty yellow hairs. The *B. glandium* (Germ.) infests acorns. —The pea weevil (*bruchus pisi*, Linn.), or pea bug, is about $\frac{1}{10}$ of an inch long, rusty black with a white spot on the hind part of the thorax and white dots on the wings. The perfect insect is found in the flowers; the eggs are laid in the young pods of peas and beans just opposite the seed, into which the larva at once penetrates; few persons are probably aware how many of these minute larvæ they eat as they indulge in early green peas; they have been known to cut off the entire crop of these vegetables; they are said not to touch the germ of the pea, though all the rest is devoured. Peas in the winter often contain these larvæ, but not when a year old; they are killed by soaking in hot water a minute or two just before planting; the crow blackbird and Baltimore oriole devour great numbers of them. This species probably originated in America, in the northern parts of which it is common, whence it has spread to central Europe. Lentils and other leguminous plants are attacked by other species.—The palm weevil or worm (*calandra palmarum*, Clairv.) is about 1½ inches long and black; the larvæ are between 2 and 3 inches long, and live in the pith of the palm, especially the cabbage palm, making a cocoon of the surrounding fibres; they are dirty yellow with a black head, looking like moving pieces of fat, and are esteemed as delicacies in the West Indies. With the larvæ of another species (*C. sacchari*, Clairv.), equally destructive to the sugar cane, these are eaten by the natives of the West Indies and Guiana, boiled, roasted, or broiled on wooden spits, with dried and powdered bread.—There are many weevils attacking resinous trees, among which one of the most destructive is the pine weevil (*curculio* [*hylobius*] *pales*, Herbst), ¼ to ⅓ of an inch long, deep chestnut brown with a few yellowish white dots and lines. Thousands of acres of pines in the southern states have been destroyed by these insects; the best way to prevent their ravages is to protect the woodpeckers, their natural enemies. The *rhynchænus strobi* (Peck) is about ¼ of an inch long, brown with many rusty white scales; they devour the leading shoot of the white pine, whose growth produces the lofty and straight trunk of this beautiful tree; the larvæ are destroyed by woodpeckers and ichneumon flies. Other species equally destructive are found on the European pines. The plum weevil is described under Curculio. (See Kollar's and Harris's works on the insects injurious to vegetation.)

WEGSCHEIDER, Julius August Ludwig, a German theologian, born at Kübbelingen, Brunswick, Sept. 17, 1771, died in Halle, Jan. 27, 1849. He studied at Helmstedt, Brunswick, and Hamburg, became a *Repetent* at Göttingen in 1805, received the degree of doctor of theology there in 1806, and became professor of theology and philosophy at Rinteln, whence in 1810 he was transferred to Halle. He was one of the leaders of rationalism, of which his *Institutiones Theologiæ Christianæ Dogmaticæ* (Halle, 1815; 8th ed., 1844) is a consistent exposition. He also wrote other important exegetical and philosophical works.

WEIGEL, Valentin, the originator of a mystic school of the 17th century, called after him Weigelians, born at Grossenhain, Saxony, in 1533, died June 10, 1588. From 1567 till his death he was a minister of the Lutheran church at Zschopau. Little was known of him during his lifetime; but when his works were published after his death by Chr. Weikert, they created at once a great sensation. The principal of them are: *Kirchen- und Hauspostill* (1611); *Von der Gelauenheit; Dialogus de Christianismo* (1614); *Gulden Gryff* (1616); *Theologie* (1618); and *Zwei schöne Büchlein vom Leben Christi* (1621). An abridgment of all his works was published under the title of *Philosophia Mystica* (1616). Weigel was a great admirer of the writings of Paracelsus and Tauler, to which he was indebted for many of his opinions. Among his peculiar doctrines are the following: The Bible is no real rule of faith, but only a record; the chief revelation is the inner word. Christ, conceived by Mary, the divine wisdom, in heaven, is inferior to the Father. Only believers should be baptized. All teaching is useless without the inner light. The theology taught by the universities is false; the true one consists in a knowledge of one's self, and of man's aim. All creatures are emanations of the divine essence. The ministry of priests and preachers, and all external forms of divine worship, are of little avail; the true veneration of God is something internal. Several of his works were publicly burned at Chemnitz, by order of the elector John George I. of Saxony; but they had already been widely circulated and made many converts, who however never formed a separate sect. The most celebrated among the followers of Weigel is Jacob Boehm, the German theosophist.

WEIGHTS and MEASURES, means of determining by comparison, and expressing, in the former instance, the mass or quantity of matter of ponderable bodies, as shown by the effect of gravity upon them, and in the latter, the magnitudes of bodies, or of the various forms under which we regard and estimate space. These are the specific and more usual meanings of the terms; but measure is also used in a general sense, to signify the finding of the relative amounts or values of things of whatever kind, the nature of which is such as to render them capable of estimation in any manner. In this sense, weight is but one sort of measure; and the latter term embraces all measurable things or values. The different species of quantity, of measure, and of unit may then be succinctly classed as follows:

SPECIES OF QUANTITY, OF MEASURE, AND OF UNIT.

1. Weights.
2. Solidities or volumes (in body, or space).
3. Surfaces (known in areas).
4. Angles (known in degrees).
5. Lines (known in lengths).
6. Times.
7. Values (money, the artificial measure).
8. Intensities or forces (expressed in weights or lengths).

Quantity is always that which can be or is measured. But in order to find and express the measure of a quantity of any kind, we must first either find in nature or assume arbitrarily some fixed magnitude or value of the given kind, by comparison with which the relative amounts of the various examples of that kind of quantity are to be ascertained. This fixed magnitude or value is the unit of measure of the given kind of quantity, or in a given one among many systems of measuring it. Whether found in nature or arbitrarily chosen, the unit itself is always incapable of measurement, and is, *in se*, an unknown magnitude; so that all measures are comparative or relative only.—Since 4 right angles just fill the entire space about any point in a plane, and so correspond to the entire circumference of a circle, the right angle becomes a natural measure, or invariable natural unit; and the value of any definite part of this or of the circle is equally fixed. The early geometers accordingly divided the circle or its circumference into 360 equal parts, one of these parts, 1°, becoming the unit of circular or of angular measure; and this measurement is still retained. (See DEGREE.) In estimating time, two natural units present themselves, the limits of which are fixed by the circuit of natural changes; namely, the day and year. (See CALENDAR, and YEAR.) For the subject of measures of value, the reader is referred to COIN, MONEY, and the articles on the various denominations of money. For measures of intensity of various natural agencies, see ELECTROMETER, LIGHT, THERMOMETER, &c. See, also, in relation to certain ordinary measures, AVOIRDUPOIS WEIGHT, BUSHEL, FOOT, GALLON, MILE, POUND, &c. The forms of measure to be considered in this article are: weight; measures of length, giving linear or long measures; of surface or area, giving square or superficial measures; and of solidity or volume, giving, when the measured object is a solid body or space, its "contents" in solid or cubic measures, and when a liquid, or a solid in small masses, as grain, salt, &c., its volume, in measures of capacity.—As continually called into requisition both in commercial and scientific pursuits, weights and measures are of indispensable utility; while for the latter of the purposes named, the utmost accuracy in their indications is desirable. Absolutely invariable standards of weight and measure, however, have never yet been, and in the nature of the materials to be dealt with cannot be, attained; while to secure and reproduce measures of given sorts, the results of which shall be correct and uniform to within the least practicable degree of variability, is a problem upon which a vast amount of scientific research, of ingenuity, and labor has already been expended. The balance, or scales, in a rude form, are known to have been in use from very early times. According to the Parian chronicle, weights, measures, and the stamping of gold and silver coins were alike the invention of Phidon, tyrant of Argos, about the middle of the 8th century B. C. The units or counterpoises to be employed in weighing could easily be obtained by taking roughly equal bulks of some substance of nearly constant density, as iron or brass; but to render them more definite and accurate, it later became necessary to call in the aid of more accurate measures of capacity; and a known volume of pure water and at known density is now the criterion universally resorted to for determining standards of weight. This supposes, however, that the volume or cubic contents are correctly known; and as we can practically only express content or capacity in terms of the cube of a length, and area in terms of the square of a length, it follows that, to obtain exact units of measure of all the kinds here to be considered, it is necessary first to fix, and to be able to reproduce with the utmost possible exactness, the unit of length. The weight of bodies in the air is slightly diminished by the buoyancy of the medium, and that of all bodies upon the earth by the centrifugal tendency due to its rotation, as well as by increase of elevation above the sea level, as in ascending mountains; but since of these three disturbances the last two affect the article weighed and the counterpoise in the same degree, and the first also if their form and volume be the same, while the difference it can occasion in the result is extremely slight in any case, it follows that in weighing ordinary articles with scales or steelyards, the true weight is still shown under all conditions of the kinds named, or at the least to within an extremely small fraction. But weight determined by stretching or compressing a spring, as in the spring balance, will be strictly proportional to the force of gravity taking effect at the place, and hence will be lessened by the increased centrifugal force as we approach the equator, and by the diminishing attraction at heights considerably above the sea level.—In the history of weights and measures, three periods distinctly present themselves: the ancient, or that in which the classical standards were employed, ending with the decline of the Roman empire; the middle, during which, while the names of the classical measures were in many instances preserved, the standards were lost, and the various national measures of Europe grew up; and the modern period, beginning near the close of the 16th century, and marked by the attempts made toward correcting the variableness found to exist in the measures of most nations, and to attain to exact standards through a knowledge and application of physical principles. Among the earlier measures of length of various nations are found such as the finger's length, the digit (second joint of the forefinger), the finger's breadth, the palm, the span, the cubit (length of forearm), the nail, the *orgyia* (stretch of the arms), the foot, pace, &c.; and the names of these measures, their almost constant recurrence among different nations, and the close approximation in length of such as have, like the foot, more nearly acquired the character of arbitrary measures, alike establish the fact that, in its origin, measurement of lengths was by the application of parts of the human body. In some parts of the East the Arabs, it is said, still measure the cubits of their cloth by the forearm, with the addition of the breadth of the other hand, which marks the end of the measure; and the width of the thumb was in like manner formerly added at the end of the yard by the English clothiers. Advantages of such measures for popular use are, that they are magnitudes known by observation and readily understood, and in an average way always capable of being recovered, when more arbitrary standards might be wholly lost. But their great disadvantage is extreme variableness, especially when directly applied; and in the gradual progress of men's minds toward exactness of conception and reasoning, though the precise period of the first of these may not now be known, three successive plans of insuring greater accuracy have presented themselves, and two at least have secured permanent adoption. The first is that of obtaining a uniform standard, by exchanging the measures by parts of the body for conventional or arbitrary lengths which should represent their average, and which were to be established by law; and this point was doubtless reached at some time among the Greeks and Romans. In England, arbitrary standards appear to have been known and in common use at an early date. The name "grain" occurring in troy weight, and "barleycorn" in long measure, show what were in that country the originals or natural units resorted to in forming these measures; or at the least, what were the natural objects chosen as the means of fixing and in case of need restoring the value of such measures. A statute of Henry III. (A. D. 1266) enacts, "that an English penny, called the sterling, round, without clipping, shall weigh 32 grains of wheat, well dried and gathered out of the middle of the ear; and 20 pence [pennyweights] to make an ounce, 12 ounces a pound, 8 pounds a gallon of wine, and 8 gallons of wine a bushel of London, which is the 8th part of a quarter." Again, Edward II. (A. D. 1324) provides that the length of 3 barleycorns, round and dry, shall make an inch, 12 inches a foot, &c. The difficulty of determining how much of the end of the grain should be removed to render it "round," makes this standard the less definite of the two. In comparisons of the recorded results of measurements in different countries of Europe, and at different periods, much confusion has existed and has been well nigh unavoidable, growing out of gradual or repeated changes in the standards in current use; and in respect to the comparison of ancient with modern measures, considerable error for a time existed, arising from the supposition that the Roman foot, and hence the related measures, were identical and so directly commensurable with the foot of England, and of some other modern European countries. For the discussion of this subject, with its bearings on admeasurements of various periods, which is chiefly interesting to the historian and the antiquary, the reader is referred to the special treatises on weights and measures, some of which will be named. As would be expected, indeed, the modern legal or conventional standards, as reproduced and in actual use, were found after a time to be subject to considerable variation. For example, from 1650 to 1688 there were in England three different measures of the wine gallon: 1, the more general opinion and usage gave 231 cubic inches to the gallon; 2, the customary standard at Guildhall, however, supposed to be of such capacity, was later found on measurement to contain only 224 cubic inches; 3, the real and legal standard, preserved at the treasury, contained 282 cubic inches. The corn gallon differed from any of these, being 268.6 cubic inches. Some suppose the gallons of 231 and 282 inches to have originated under separate enactments, the latter from one of Henry VII., directing that the gallon contain 8 lbs. of wheat; but Oughtred holds that the larger or beer gallon was allowed for liquids which yield froth; while the less gallon was that appropriated to the liquids, such as wine and oil, which, as not frothing, show at once their true volume. Variations of this sort in measures must however have existed without intention, and increased; and hence the second step toward exactitude of measurements became necessary, namely, that of making accurate comparisons of the various standards of each given sort in a country, with a view to discover which most truly preserved the measure originally intended, and also by what means this selected standard could be most certainly multiplied and perpetuated. Attempts of this kind appear in England to have been commenced under the auspices of the royal society in 1736 and 1742; in the former year, by a comparison of the English, French, and old Roman standards; and in the latter, by the determination, by George Graham, of the length of a pendulum beating seconds at London (at 39.13 inches), and the construction of a standard yard. Of this, under direction of the house of commons, Mr. Bird prepared two accurate copies, respectively marked "Standard yard, 1758" and "1760," and intended for adoption as the legal standards. He carefully determined and prepared also the pound troy, the original of that now in use. Of these two standards, in fact, no intentional alteration has since been made; so that these and their derivatives are now in use in England and the United States. The act of parliament under George IV. (1824), establishing the so called "imperial measures," adopted the above yard from the copy of 1760, and also the pound troy of 1758, though it introduced changes in the measures of capacity, the bushel and gallon, hereafter to be referred to. The third proposed step in the way of rendering measures exact, has reference rather to the means of making the standards recoverable in case under any circumstances they should be lost. In the definite pursuit of this purpose, the French philosophers of the time of the revolution took the lead. Before the completion of the survey of an arc of a meridian on which this was to be based, a "provisional metre," corresponding with existing surveys, was introduced in 1795. The definitive and present metrical system (see FRANCE) was promulgated in 1799; but owing to the aversion of the people to accept the new measures, in 1812 a sort of compromise was engrafted upon the metrical system, in the *système usuel*, the standards of which were the new ones, while the divisions corresponded nearly with those formerly in use, ascending commonly in ratios of 2, 3, 8, or 12. In 1837, however, this method was abolished, and the metre and its derivatives finally established, to be in effect after Jan. 1, 1840. The metre, or unit of length, on which the whole system is based, is supposedly the $\frac{1}{10,000,000}$ part of a quadrant of the meridian measured by Delambre and Mechain, and thus is of the length of 39.37079 English inches. It is a singular comment on this extreme endeavor after a natural unit, that already the measurement of the meridian on which it is founded has been determined to be by a minute fraction too small; in other words, that the whole of the meridian measured is a fraction over 40,000,000 metres in length. The efforts of the French philosophers called attention in England to the desirableness of having the standards commensurable with a natural unit; and for this purpose, the length of the seconds pendulum at London was that selected. Reports made in 1816, 1818, and 1820, to the house of commons, based on experiments and comparisons, in which Wollaston, Dr. Young, Capt. Kater, and Prof. Playfair took a prominent part, led to the adoption of the imperial measures and standards, under the act 5 George IV., which took effect Jan. 1, 1826, and which the law of 5 and 6 William IV., taking effect Jan. 1, 1836, did not modify in respect to the standards adopted. The weights and measures which had been in vogue in England previous to these acts, based on Bird's standards, 1758 and 1760, had meanwhile become established in the United States, so that here the standards of the old English system are still in force. In the imperial measures, the yard copied from the standard of 1760 was to be of brass, and measured at the temperature of 62° F., while its length was further defined by declaring that of the pendulum beating seconds of mean time in the latitude of London, at the above temperature, in a vacuum, and at the level of the sea, to be 39.1393 inches of the above standard. The pound troy, from the standard of 1758, is also defined by determining that the cubic inch of distilled water weighed in air by brass weights, at 62°, the barometer being at 30 inches, is equal to 252.458 grains (the pound being 5,760 grains). The standard for measures of capacity, whether dry or liquid, was declared to be the gallon, to contain 10 lbs. avoirdupois weight (this pound being 7,000 grains troy) of distilled water, weighed in air, at 62° F., the barometer showing 30 inches—this to be thenceforward the measure for all liquids; and the bushel being determined by the requirement that it should contain 8 such gallons. These standards only became compulsory as the sole legal measures after Jan. 1, 1836. The gallon in this system contains 277.274 cubic inches. The former wine gallon is hence 0.83311 of the imperial, or very nearly 6 of the former to 5 of the latter; while the old or Winchester bushel (so called because its standard was long preserved at Winchester) was 0.969447 of the imperial bushel, or about 33 of the former to 32 of the latter. Of the English standard yard, the royal astronomical society ordered in 1832 a copy prepared with great care for their use; and this Mr. Baily completed in 1834, the same year in which the previous standards were lost by the burning of the houses of parliament. The commission appointed in 1838 to restore the lost standards, of which Airy, Baily, Herschel, Lubbock, and Sheepshanks were members, after much investigation, reported in 1841 that, since the passage of the act 5 George IV., several elements of reduction of the pendulum experiments, on which some of its provisions were based, had been found to be doubtful or erroneous, there having been defects in the agate planes of the pendulum used by Capt. Kater, and errors in finding its specific gravity, and in reductions for buoyancy of the air and for elevation above the sea level. They concluded that the course prescribed in the act would not necessarily reproduce the original yard; that the other definition in the act of the yard as a certain brass rod was the best that could be adopted; and that by aid of the astronomical society's scale, and a few other highly accurate copies known, the standard could be restored without sensible error. Mr. Baily was selected to prepare the new standard, having 5 copies of the preceding on which to base his comparison; and upon his death in 1844 Mr. Sheepshanks continued the necessary observations, the latter alone executing in all, in course of this labor, some 200,000 micrometric measurements. Of several standard copies finally prepared by him, each being a square inch bar, 38 inches in length, of a bronze consisting of copper with a small percentage of tin and zinc, 6 copies were finally selected and reported by the commissioners in March, 1854; of these, the one marked "Bronze, 19" was selected as the parliamentary standard yard, the remaining 5 being deposited, along with copies of the standard of weight, with as many public institutions and scientific bodies. These standards were legalized in July, 1855; and in case of loss of the parliamentary copy, it was provided that the standards should be restored by comparison of the other selected copies, or such as might be available. Thus, the latest verdict of science may be regarded as adverse to the practicability of basing a system of weights and measures on any invariable natural unit of dimension. It is still doubted in England whether the new yard is not a fraction longer than the old; but the scales used in the recent trigonometrical surveys have all been compared with that of the astronomical society, and are therefore known independently of that which has been made the national standard.—The weights and measures successively adopted by the various colonies planted in America were from the first, or very early became, the same with those of England at the given period. Rather, it may be said, they purported to be the same, though naturally considerable variations grew up in the different colonies, and the several weights and measures already in use being adopted with little or no change when these became states, the discrepancies continued to exist. By a resolution of the senate, March 3, 1817, John Quincy Adams was commissioned to examine and report upon the subject of the weights and measures of the United States, including (it appears) the question of the desirableness of the adoption of the French system or some similar one. Mr. Adams had the standards employed in the various custom houses of the country examined and carefully measured during the years 1819–'20; and in a table accompanying his report, published in Washington in 1821, he shows that very considerable discrepancies then existed within the limits of the several states, and often within the same state, in all the measures of weight, dimension, and capacity. Reviewing the French system at great length, he reported unfavorably to its adoption, chiefly on the grounds of the popular repugnance to a new system—since his time overcome in France, as we have seen—of the subversion of uniformity that for a time must result, and the inconvenience, as he was led to believe, of a decimal system. For the sake, among other reasons, of facilitating commerce with Great Britain, and cultivating relations of amity with that nation, he recommended that the weights and measures of the United States remain, and be more accurately conformed to those of England, though, as has been seen, the latter were soon afterward in part changed. He concludes that an act of congress should declare what are the legal weights and measures of the nation; and that positive standards should be constructed, duplicates of which should be furnished to the executive authorities of every state and territory. By an act of congress, May 19, 1828, the brass troy pound procured by the American minister at London in 1827, and which was a copy prepared by Capt. Kater of the English standard, was declared the standard troy pound of the mint of the United States, and conformably to which its coinage should be regulated. The senate, May 29, 1830, directed a new comparison of the weights and measures in use at the different custom houses. This was intrusted to the late Professor Hassler; and though much discrepancy was found, the mean corresponded closely with the English standards previous to 1776. Under Mr. Hassler's supervision, accurate and authentic copies of the received standards of weights and measures were prepared, and supplied to all the custom houses. Meanwhile, by a joint resolution of congress, the secretary of the treasury was directed "to cause a complete set of all the weights and measures adopted as standards . . . . to be delivered to the governor of each state in the Union . . . . for the use of the states respectively, to the end that a uniform standard of weights and measures may be established." These, and also standard balances as afterward ordered, have been supplied as directed. By many of the states the former have been regularly adopted; while the standards authorized in certain states still differ from the national. Of these latter, the standard of length is the yard, as marked upon a brass scale 82 inches long, prepared by Troughton of London, and which is deposited in the office of weights and measures at Washington. The standard of weight is the troy pound already referred to. The avoirdupois pound is 7,000 troy grains. The units of capacity are the gallon for liquid and the bushel for dry measures. The gallon is the capacity of a vessel containing 58,372.2 grains troy, of the standard pound, of distilled water at the maximum density, 39° F., weighed in air of the temperature of 62°, and barometric pressure of 30 inches; it is thus very nearly 231 cubic inches. The bushel is the capacity of a measure containing 54,3391.89 standard grains troy (=77.6274 lbs. avoirdupois) of distilled water under the same conditions as those just named, and is thus the Winchester bushel of 2,150.42 cubic inches. The fractional values given in connection with the imperial measures above, thus serve for comparing these standards of capacity with the imperial.—The accurate comparison or measurement by one another of existing standards of length, and determination of copies of such, is a work requiring extreme care; the observations must be very frequently repeated; and in view of differences in the powers and mode of observing of different persons, and unavoidable or as yet unaccountable changes of the materials under certain conditions, it is better that the observations be made by many persons and in different ways. A careful examination and comparison then determine which among the results, all of which have been recorded, are the most trustworthy; and of these the average is taken as most nearly giving the true result. Thus, at the last, extremely close approximations are alone possible. For example, it was found in the course of Mr. Baily's experiments that a change of 0.01° F. produces a sensible alteration (under the microscope) in the measure of a metallic bar; and Kater had observed that small inequalities in the surface a bar rests on also produce changes in its length; so that the same bar at different times and apparently under the same conditions may not show the same measure. Add to all this the impossibility of obtaining absolutely invariable measures of temperature by the thermometer, and some of the difficulties of the subject will be apparent. Thus, calling the astronomical society's scale 36 inches, Bird's of 1760 was found less by .000376 inch, while of the others examined all were greater or less by some small fraction. The comparison and verification of the scales are conducted by aid of a form of dividing engine, carrying over either end of the bar a microscope, with intersecting micrometer lines for determining the position of points on the scale.—The American pharmaceutical association having had under consideration for some years previously the subject of weights and measures, a committee, of which Mr. Alfred B. Taylor of Philadelphia was chairman, presented at the meeting of that body in Boston in 1859 a very minute and full report, historical and critical, in relation to the varieties of systems of weight and measure in use for different purposes, in this country and Great Britain; recommending an "octonary" scale of progression in numbers, or one ascending by eights, in place of the existing decimal scale; and proposing new and simpler names for the 7 digits—to use the customary term—in that case resulting, and new tables of denominations for the several sorts of measure. This is one of the many propositions of late years made with a view to obviate in a large degree, or at least greatly to simplify, the tedious numerical calculations now required in the various sorts of business transactions. An objection to the systems thus proposed appears in the number of denominations made in a given measure, sometimes as many as 11; and with a view to remove such complexity, Mr. John Meakim of New York had previously reported to the same body in favor of systems of weight and measure like to our money scale in having few denominations, the values to correspond with alternate denominations of the French decimal system, and thus to ascend in centuple instead of tenfold ratios. Thus, the single table for weight of all weighed articles whatever should consist of the centigramme, gramme, hectogramme, and myriagramme; the first equalling about $\frac{1}{6}$ grain, and the others successively 100 times greater.—Among special treatises may be named Panctou's *Métrologie* (Paris, 1780); the report of J. Q. Adams (8vo., Washington, 1821); the "Account of the Construction of the New National Standard of Length, and of its principal Copies," in the "Philosophical Transactions" (vol. clxvii., London, 1857); account of the restoration of the standard of weight, in the "Philosophical Transactions" (1856); "Universal Dictionary of Weights and Measures," by J. H. Alexander (Baltimore, 1850); and Woolhouse's "Measures, Weights, and Moneys of all Nations" (Weale's series, London, 1856).—The following is a summary of weights and measures in use among some of the principal nations of the globe:

N. B.—The gallon and bushel named in the following table are the imperial. To reduce the imperial gallon to the U. S. gallon, divide by 0.83311; to reduce the imperial to the U. S. bushel, by 0.969447.

Arabia (Mocha).—For liquids: 128 vakias = 8 noosfias = 1 gudda = 2 gallons. Weights: 40 vakias = 1 maund = 3 lbs. avoirdupois; and 150 maunds = 15 frazils = 1 bahar = 450 lbs. The weights of Egypt are used in some parts.

Argentine Republic.—(See Spain.)

Austria.—Length: 1,728 punkte = 144 linien = 12 zoll = 1 fuss = 1.0371 ft.; 6 fuss = 1 klafter; and 4,000 klafter = 1 meile = 4.7142 miles. Surface: 1,600 square klafter = 1 joch = 1.4223 acres. Liquid: 80 kannen = 40 masse = 4 viertel = 1 eimer = 12.457 galls.; and 32 eimer = 1 fuder. Dry: 16 muhlmassel = 8 achtel = 4 viertel = 1 metze = 1.6918 bush.; and 30 metzen = 1 muth. Weight: 1 loth = 270.2 grs.; and 32 loth = 16 unzen = 4 vierding = 2 mark = 1 pfund = 1.2352 lbs. The measures differ in some parts; and the official system, since 1804, is the French metrical system, but under different names.

Baden.—The fuss is 0.9842 ft.; the stütze, 3.3014 galls.; the malter, 4.1268 bush. = 15 décalitres; the pfund, 1.1029 lbs. avoirdupois.

Bavaria.—The fuss is 0.9517 ft.; the eimer, 14.116 galls.; the scheffel, 6.1172 bush.; the pfund, 1.2346 lbs.

Belgium.—Since 1820, the French weights and measures, but retaining mainly the Dutch names; as, aune or elle for mètre; litron or kan for litre; livre or pond for kilogramme. Thus, in weight, the denominations, ascending by tens, are the korrel, wigtje, lood, ons, and the pond = 2.20486 lbs. Surface: 100 sq. elles = 1 are = 119.6033 sq. yds. The cubic elle = 1 stère = 1.308 cubic yds.

Bohemia.—The Prague foot = 11.88 inches. The measures are generally those of Austria.

Brazil.—In general, those of Portugal. But of Brazil pounds, 99 = 100 lbs. avoird.; 5 varas = 6 yds. The medida = $\frac{3}{5}$ gall.; the alqueire = 1.1004 bush.; the mark = 7.3781 oz. troy.

Bremen.—The fuss is 0.9483 ft.; the morgen, 0.6343 acre; the viertel, 1.5953 galls.; the scheffel, 2.0377 bush.; the pfund = 2 mark = 16 unzen = 32 loth = 1.0986 lbs. avoird.

Canada and other British Possessions in North America.—The weights and measures are generally those of the former English system; hence, nearly or quite the same as those of the United States.

Cape of Good Hope.—The Dutch standards were formerly in use, but are now mainly superseded by the English.

Chili.—In general, those of Spain.

China.—Length: 100 fans = 10 tsuns = 1 chik or covid = 14.1 inches; and 100 chiks = 10 cheüngs or fathoms = 1 yan = 117.5 ft. Capacity: 100 kops = 10 shings = 12 catties = 1 tau = 1.2 galls.; and 10 taus = 1 hwuh = 12 galls. Weight: 16 taels = 1 catty or pound = $1\frac{1}{3}$ lbs. avoird.; 100 catties = 1 pecul or tam = $133\frac{1}{3}$ lbs.

Cuba.—Generally, those of Spain. In trade are also used 100 pounds = 4 arrobas = 1 quintal = 101.75 lbs. avoirdupois; the vara = 33.333 inches; the fanega = 2.9 bush.; the arroba, for wine, 3.42 galls.

Denmark.—Length: 144 linien = 12 tommen = 1 fod = 1.0298 ft.; and 24,000 fod = 12,000 aln = 1 miil = 4.68 miles. Liquid: 8 pott = 4 kanden = 1 viertel = 1.7003 galls.; and $4\frac{7}{8}$ viertel = 1 anker = 8.2914 bush. Dry: 36 pott = 2 skieppen = 1 fjerding = 0.9597 bush.; and 88 fjerding = 22 tonnen = 1 last = 84.188 bush. Weight: 32 ort = 1 unze = 1.1029 oz. avoird.; and 16 unzen = 2 mark = 1 pund = 1.1029 lbs.; 16 pund = 1 lispund; 20 lispund = 1 skippund = 3.151 cwt.

East Indies (Bengal, Calcutta).—Length: 36 jows = 12 ungleez = 3 moots or hands = 1 span = 9 inches; and 8 spans = 4 cubits = 2 guz or yards = 1 fathom; 1,000 fathoms = 1 coss = $1\frac{3}{32}$ miles. Weight (bazaar): 80 siccas = 16 chittacks = 1 seer = 2.0533 lbs.; and 40 seers = 1 maund. In Madras, the marcal is 2.704 galls.; the vis, 3.125 lbs. In Bombay, the hath is 18 inches; the parah, 3.03 bush.; the seer, 0.7 lb. Many other variations, of course, exist in the different districts and islands.

Egypt.—The common cubit = 22.667 inches; that for Indian goods, 25 in.; for European cloths, 26.5 in. Dry: 24 roobahs = 6 weybehs = 1 ardeb = 4.847 bush. Weight: 144 dirrhems = 12 oockeeyehs = 1 lb. or rutl = 15.75 oz. avoird.; and 100 rutl = 1 cantar. The weights and measures vary, however, in different parts.

France.—Length: 1,000 millimètres = 100 centimètres = 10 décimètres = 1 mètre = 39.37079 inches; and 10,000 mètres = 1,000 décamètres = 100 hectomètres = 10 kilomètres = 1 myriamètre = 6.21382 miles. Surface: 100 centiares = 1 are, *i. e.*, 1 square décamètre = 0.0247 acre; and 100 ares = 10 decares = 1 hectare. Liquid 1,000 millilitres = 100 centilitres = 10 décilitres = 1 litre, *i. e.*, 1 cubic décimètre = 61.02705 cubic inches = 1.7608 imperial pints; and 10,000 litres = 1,000 décalitres = 100 hectolitres = 10 kilolitres = 1 myrialitre = 2,200.9667 galls. Solid: 10 décistères = 1 stère, *i. e.*, 1 cubic mètre = 35.3166 cub. ft.; and 10 stères = 1 décastère. Weight: 1,000 milligrammes = 100 centigrammes = 10 décigrammes = 1 gramme = 15.44 grs. troy; and 10,000 grammes = 1,000 décagrammes = 100 hectogrammes = 10 kilogrammes = 1 myriagramme = 22.057 lbs. avoird. In the old system, of length: 144 lignes = 12 pouces = 1 "pied de roi" = 12.79 inches; and 12,000 pieds = 2,000 toises = 1 "lieue de poste." Weight: 72 grains = 1 gros; and 128 gros = 16 onces = 2 marcs = 1 poids de marc = 1.3116 lbs. troy.

Frankfort-on-the-Main.—The fuss is 11.27 inches; the viertel, 1.5784 galls.; the malter or achtel = 4 simmer = 3.1568 bush.; the pfund = 1.0314 lbs. avoird.

Germany.—Great diversity of weights and measures obtains in the different states, the more important of which are accordingly noticed separately. Frequently, the standards, though differing in amount, have similar multiples and subdivisions.

Great Britain.—For the value of the several units of weight and measure, see the preceding general statement. The denominations and values in the measures of length, surface, and solidity are the same as those of the United States. The same is true of the various systems of weight. The stone is 14 lbs. The units of liquid and of dry measure at present differ from those of the United States, as previously explained, being those known as the imperial; and the denominations in use in these also differ. Thus, in wine measure: 32 gills = 8 pints = 4 quarts = 1 gallon; 36 gallons = 1 tierce; 1½ tierces = 1 hogshead; 2 hogsheads = 1 pipe, butt, or puncheon. Beer measure: 32 gills = 8 pints = 4 quarts = 1 gallon; and 36 gallons = 4 firkins = 2 kilderkins = 1 barrel; 3 kilderkins (54 gallons) = 1 hogshead; 4 hogsheads = 2 butts = 1 tun. Dry (the gallon the same as for liquids): 32 gills = 8 pints = 4 quarts = 1 gallon; 8 gallons = 4 pecks = 1 bushel; and 80 bushels = 20 coombs = 10 quarters = 2 weys = 1 last. The pottle is ½ gallon; the strike, 2 bushels. The hogshead, pipe, and puncheon (liquid measure) differ also in the case of different wines or other spirituous liquors intended.—The old Scottish and Irish measures differed from the English, and were also variable with locality.

Greece.—The French metrical system is in use. Of old measures of length, the short and long picha are 25 and 27 inches, the cubit 18 inches, the stadium 600 feet; the kila is 0.9152 bush.; the pound, 0.8811 lb. avoird.

Hamburg.—Length: 96 achtel = 12 zoll = 1 fuss = 0.9408 ft.; and 2 fuss = 1 elle; the meile = 4.6807 miles. The morgen = 2.3895 acres. Liquid: 16 össel = 8 quartier = 4 kannen = 2 stübchen = 1 viertel = 1.5934 galls.; and 120 viertel = 24 anker = 6 ohm = 1 fuder; the eimer is 4 viertel. Dry: 8 spinte = 2 himt = 1 fass = 1.4485 bush.; and 60 fass = 30 scheffel = 2 wispel = 1 last. Weight: 32 pfennige = 8 quentchen = 2 loth = 1 unze = 1.068 oz. avoird.; and 16 unzen = 2 mark = 1 pfund = 1.068 lbs.

Hanover.—Length: 144 linien or 96 achtel = 12 zoll = 1 fuss = 0.9542 ft.; and 16 fuss = 8 ellen = 1 ruthe; 25,400 fuss = 1 meile = 4.5901 miles. Liquid: the denominations have the same scale and names as in Hamburg, except that the össel is called nössel, the viertel being 1.7118 galls.; the eimer is 13.6944 galls. Dry: 24 vierfass or 18 drittel = 6 himt = 1 malter = 5.1337 bush.; and 16 malter = 2 wispel = 1 last. Weight: scale and names as in Hamburg; except the use of örtchen for spinte, the pfund being 1.0731 lbs. avoird.

Holland.—The French metrical system has been in use since 1817, but with the Dutch names. Length: the denominations from the millimètre to the kilomètre inclusive take the names streep, duim, palm, elle, roede, mijle; the elle = 1 mètre. Liquid: from the centilitre to the hectolitre inclusive, the names are vingerhoed, maatje, kan, vat; the kan = 1 litre. Dry: from the décilitre to the hectolitre the names are maatje, kop, schepel, mudde or zak; the kop = 1 litre; 30 mudde = 1 last. Weight: from the décigramme to the kilogramme the names are korrel, wigtje, lood, ons, pond; the wigtje = 1 gramme.

Japan.—The inc = 6.25 ft.; the weights are very nearly those of China.

Lübeck.—The fuss is 0.9542 ft.; the viertel, 1.594 galls.; the scheffel, 0.92 bush.; the pfund, 1.0686 lbs. avoird.

Mecklenburg.—The weights and measures are the same, throughout this state, as those of Hamburg, except that the measures of capacity are those of Lübeck.

Mexico.—The weights and measures are those of Spain, but with many local variations.

Morocco.—The cubit or canna is 21 inches; the pic, 26 inches; the commercial pound is 1.19 lbs., and the market pound, 1.785 lbs. avoird.

Naples.—The palmo is 0.8652 ft., and the miglio 1.147 miles; the moggio, 0.87 acre; the barile (wine, &c.), 9.174 galls., and the stajo (oil), 2.228 galls.; the tomolo, 1.407 bush.; the libbra, 0.8594 lb. troy.

Norway.—See Sweden.

Persia.—The royal guertze is 37½ inches, the common, 25 inches; the artaba, 1.809 bush.; the rattel, 1.0568 lbs. avoird.

Poland.—The lokiec is 22.68 inches; the morg, 1.384 acres; the garniec, 0.8804 gall.; the funt, 0.894 lb. avoird.

Portugal.—Length: 12 pontos = 1 linha; 96 linhas = 8 pollegadas = 1 palmo or span = 0.7214 ft.; and 10 palmos = 2 varas = 1 braça or fathom; the milha = 1.2786 miles. The geira is 1.4453 acres. Liquid; 24 quartilhos = 6 canadas = 1 pote, cantaro, or alqueire = at Lisbon 1.8202 galls., at Oporto 2.76 galls.; and 2 potes = 1 almude. Dry: 32 outavas = 4 alquieres = 1 fanga = at Lisbon 1.4878, and at Oporto 1.8782 bush.; and 15 fangas = 1 moio. Weight: 72 graos = 3 scropulos = 1 outava; 128 outavas = 16 onça = 1 arratel = 1.01186 lbs. avoird.; and 128 arratels = 4 arrobas = 1 quintal = 129.518 bush.

Prussia.—Length: 1,728 scrupel = 144 linien = 12 zoll = 1 fuss = 1.0298 ft.; and 12 fuss = 1 ruthe; 2.000 ruthen = 1 post-meile. The morgen is 0.631 acre. Liquid: 120 össel = 60 quartier = 2 anker = 1 eimer = 15.118 galls.; and 12 eimer = 6 ohm = 1 fuder. Dry: 64 mässchen = 16 metzen = 4 viertel = 1 scheffel = 1.5121 bush.; and 72 scheffel = 6 malter = 1 last. Weight: 128 quentchen = 32 loth = 16 unzen = 2 mark (Cologne) = 1 pfund = 1.0311 lbs. avoird.

Rome.—Length (commercial): the piè is 0.966 ft.; the palmo, 0.733 ft.; the braccio, 2.561 ft.; the palmo for cloth is 8.347 inches. Length (in architecture, &c.): 120 decimi = 12 once = 1 palmo = 0.7325 ft.; and 10 palmi = 1 canna, the catena being 57½ palmi; and the piè = 16 once = 0.9767 ft. Liquid: 16 quartucci = 4 fogliette = 1 boccale = 0.4012 gall.; 32 boccali = 1 barile, and 16 barili = 1 botte. Dry: 4¾ quartucci = 1⅜ scorzi = 1 starello = 0.5063 bush.; and 16 starelli = 4 quarte = 1 rubbio. Weight: 24 grani = 1 denaro; 24 denari = 1 oncia; 12 once = 1 libbra = 0.7477 lb.

Russia.—Length: 16 verschoks = 1 arshin = 28 inches; and 1,500 arshins = 500 sashins = 1 verst or werst = 0.6629 mile. Liquid: 100 tcharkeys = 1 vedro = 2.7049 galls.; 3 vedros = 1 anker, and 40 vedros = 1 sarokovaya. Dry: 16 garnetz = 8 tchetverkas = 2 tchetveriks = 1 payak = 1.4426 bush.; and 4 payaks = 2 osmins = 1 tchetvert. Weight: 96 doli = 1 zolotnik = 0.1504 oz. avoird.; 12 lanas (each 8 zolotniks), or 32 loths (each 3 zolotniks) = 1 funt = 0.9026 lb. avoird.; and 1,200 funts = 30 poods = 10 berkovitz = 1 packen.

Sardinia (Genoa).—The palmo is 0.8173 ft., the piede manuale 1.226 ft., the piede liprando 1.6857 ft., the braccio 1.907 ft.; the barile = 50 pinte = 16.337 galls.; the quarto = 12 gombette = 0.415 bush.; the rottolo = 18 once = 1.0483 lbs. avoird.

Saxony.—The fuss is 0.929 ft.; the kanne is 0.265, and the eimer 16.6942 galls.; the viertel is 0.7146, and the scheffel 2.8583 bush.; the pfund = 16 unzen = 1.0309 lbs. avoird.

Siam.—The ken is 3.153 ft.; the sesti, ⅛ bush.; the tael 0.129, and the catty 2.583 lbs. avoird.

Sicily.—The palmo is 9.53 inches; the salma (Messina), 19.226 galls.; the grossa, 9.472 bush.; the libbra, 0.7 lb.; and the rottolo, heavy and light, 1.925 and 1.75 lbs. avoird.

Spain (Madrid and Castile).—Length: 144 puntos = 12 lineas = 1 pulgada = 0.927 inch; 12 pulgadas = 2 sesmas = 1 pie = 0.9273 ft.; and 12 pies = 4 varas = 1 estadal; the palmo is 8.346 inches; the legua = 8,000 varas = 4.2152 miles. Liquid: 128 copas = 32 quartillos = 8 azumbres = 1 arroba or cantaro = 3.538 galls. Dry: 16 ochavillos = 4 raciones = 1 quartillo; and 48 quartillos = 24 medios = 12 almudes = 1 fanega = 1.5503 bush.; and 12 fanegas = 1 cahiz = 18.6034 bush. Weight: 12 granos = 1 tomin; 48 tomines = 16 adarmes = 8 ochavas = 1 onza = 0.0634 lb.; and 16 onzas = 2 marcos = 1 libra = 1.0144 lbs. avoird.

Sweden and Norway.—Length: 144 linies = 12 tums = 1 fot = 0.9742 ft.; and 6 fots = 3 alns = 1 famn; 6,000 famn = 1 mil = 6.6423 miles. Liquid: 32 jungfrus = 8 qvarters = 2 stops = 1 kanna = 0.5756 gall.; and 48 kannas = 1 tunna = 27.6288 galls. Dry: 224 orts = 56 qvarters = 14 stops =

7 kannas = 1 fjerding = 0.5038 bush.; and 8 fjerdings = 2 spanns = 1 tunna = 4.03 bush. Weight (commercial): 128 qvintin = 32 lods = 16 uns = 1 skälpund = 0.9376 lb. avoird.; and 400 skälpunds = 20 lispunds = 1 skeppund = 375.04 lbs.

Switzerland.—Several different systems prevail in the different cantons. In Bern, of length: 1,728 secunden = 144 linien = 12 zoll = 1 fuss = 0.9617 ft.; 10 fuss = 1 ruthe; 26,666⅔ fuss = 1 meile = 4.8568 miles. For liquids, the eimer = 25 mass = 100 viertel = 9.19 galls. The mutt = 12 mäss = 4.625 bush. Weight: 32 pfennig = 8 quent = 2 loth = 1 unze; and 16 unzen = 1 pfund = 1.1514 lbs. avoird.

Tripoli.—The Turkish dreah or pic = 3 palmi = 26.42 inches; the less dreah = 19.03 inches. The barile = 24 bozze = 14.267 galls. The ueba = 4 temen = 16 orbahs = 2.9533 bush. The okie = 1 oz. troy; 1,600 okies = 100 rottols = 1 cantar = $109\frac{5}{7}$ lbs. avoird.

Turkey.—The pic or pike is 26.8 inches; the almud, 1.152 galls.; the killow, 0.912 bush. Weight: 400 drams = 4 chequees = 1 oke = 2.8286 lbs. avoird.; and 45 okes = 1 kintal or cantaro = 127.3 lbs.

Tuscany.—The palmo is 0.9575 ft.; the braccio, 1.915 ft.; the barile (wine) = 20 fiaschi = 40 boccali = 10.032 galls.; the sacco = 3 staja = 12 quarti = 2.0112 bush.; the libbra = 12 once = 96 dramme = 0.7486 lb. avoird.

United States.—For the value of the several units of weight and measure, see the preceding general article. Length: 6 points = 1 line; 144 lines or 36 barleycorns = 12 inches = 1 foot; 16½ ft. = 5½ yards = 1 rod, pole, or perch; 320 rods = 80 chains = 8 furlongs = 1 mile (1,760 yds. or 5,280 ft.). 1 chain = 100 links, each of 7.92 inches. The nail is 2¼ inches; the palm, 3 inches; the hand, 4 inches; the span, 9 inches; the quarter of cloth, 9 inches; the ell, Flemish, English, and French, respectively 3, 5, and 6 quarters; the cubit, 1½ ft.; the pace, 5 ft.; the fathom, 6 ft.; a cable's length, 120 fathoms; a league, 3 miles; a degree of the meridian, 69.046 miles. Surface: 144 square inches = 1 sq. ft.; 272¼ sq. ft. = 30¼ sq. yds. = 1 sq. rod; 160 sq. rods = 4 roods = 1 sq. acre; 640 sq. acres = 1 sq. mile. Also, 160 sq. rods = 10 chains = 1 sq. acre. Solid or cubic measure: 1,728 solid inches = 1 solid foot; 27 solid feet = 1 solid yard; 40 feet of round timber, or 50 feet of hewn = 1 ton or load; 128 solid feet = 1 cord (of wood). Liquid.—1. Wine measure: 32 gills = 8 pints = 4 quarts = 1 gallon; 63 gallons = 2 barrels = 1 hogshead; and 4 hogsheads = 2 pipes = 1 tun. 2. Beer measure: 8 pints = 4 quarts = 1 gallon; 36 gallons = 1 barrel; 54 gallons = 1 hogshead. Dry: 64 pints = 32 quarts = 4 pecks = 1 bushel; and 36 bushels = 1 chaldron. Weight.—1. Avoirdupois: 256 drams = 16 ounces = 1 pound; 112 lbs. = 4 quarters = 1 hundred weight; and 20 hundred weight = 1 ton. The hundred weight of 100 lbs. is coming into more general use. 2. Troy: 24 grains = 1 pennyweight; and 240 dwt. = 12 ounces = 1 pound. 3. Apothecaries': 480 grains = 24 scruples = 8 drams = 1 ounce; and 12 ounces = 1 pound. The pound and ounce in this weight are the same as in troy weight.

Venetia.—In the decimal system, introduced in 1803, the metro or braccio = 10 palmi = 100 diti = the French mètre, and 1,000 metri = 1 miglio; the soma = 10 mine = 2.7512 bush.; the libbra metrica = 10 once = 100 grossi = 1,000 denari = 2.2046 lbs. avoird.

West Indies.—In those now or originally belonging to England, France, Holland, and Denmark, respectively, the British, French, Dutch, and Danish systems chiefly prevail. Spanish measures are partly in use in Trinidad, however; the Spanish vara in Curaçoa; and in some of the Danish isles the British yard and the old French aune = 46.85 inches.

WEIL, Gustav, a German orientalist and historian, born at Sulzburg, Baden, April 24, 1808. He studied Jewish theology with his grandfather, who was rabbi of Metz, but abandoned theology to devote himself wholly to oriental literature. In order to perfect himself in the knowledge of Arabic, he went in 1830 to Paris, and from there to Cairo, where he spent 5 years, receiving instruction from Arabic, Persian, and Turkish teachers, and was himself for some time teacher of French at one of the schools of Cairo. After his return to Germany he was appointed assistant librarian of the university of Heidelberg, and in 1845 extraordinary and in 1861 ordinary professor of oriental languages there, the first instance of a Jew having attained that position. Weil is one of the principal writers on Mohammed and Mohammedanism. His life of Mohammed (*Mohammed der Prophet*, Stuttgart, 1843) marks the beginning of a new era in the literature on this subject, and is still considered as a standard work. It was followed by his *Historisch-kritische Einleitung in den Koran* (Bielefeld, 1844), *Geschichte der Khalifen* (3 vols., Mannheim, 1846–'51), and other works. He has also published a new translation of the Arabian Nights (4 vols., Stuttgart, 1837–'41), and *Die poetische Literatur der Araber* (Stuttgart, 1837).

WEILL, Alexandre, a French journalist and man of letters, born in Alsace in 1813. He is of Jewish descent, was educated in Germany, where he wrote for the newspapers of Berlin, Leipsic, Cologne, and Stuttgart, returned to France in 1838, and became connected with Louis Blanc's *Revue du progrès*, and with the *Journal des écoles*. He contributed to the *Démocratie pacifique* a historical essay on the peasants' war (1847), and in 1848 became foreign editor of the *Presse*. He was afterward employed for some time upon the legitimist journal the *Gazette de France*, in which he advocated a constitutional monarchy. He has published a number of political tracts, a translation from the Hebrew entitled *Les mystères de la création* (1854), a historical essay on Schiller (1854), an essay on *L'idéal* (1854), *Contes d'amour* (1856), &c. His *République et monarchie* (1848) passed through 6 editions.

WEIMAR, a town of Germany, capital of the grand duchy of Saxe-Weimar-Eisenach, on the Ilm, 53 m. by railway S. W. from Halle; pop. in 1858, 13,194. It is built in a valley, and has a dull antiquated look, with few public buildings to arrest attention. The palace contains a suite of apartments decorated with frescoes illustrating passages in the works of Schiller, Goethe, Herder, and Wieland. A fine park and gardens are attached to it, and it has a library of about 130,000 volumes. The court theatre, rebuilt in 1825, had under the management of Goethe and Schiller an honorable share in forming the public taste, and good performances are still given in it. In the principal Protestant church there is a famous picture by Cranach. The above named and other great men formerly resided here by invitation of the court, and gave the town the title of the Athens of the north by which it was long known. The houses of the first two poets, as well as that of Cranach, are shown to strangers.

WEIMAR, Duke and Duchess of. See Bernhard, and Amalia.

WEIMAR, Saxe. See Saxe-Weimar-Eisenach.

WEINBRENNER, Friedrich, a German architect, born in Carlsruhe in 1766, died there, March 1, 1826. He studied in Italy, and established himself in Carlsruhe in 1798, founding a school of architecture. His principal designs are the theatres of Carlsruhe and Leipsic, the estates or diet building in Carlsruhe, and two churches in the same city. He published several works on architecture.

WEIR, Robert Walter, an American painter, born in New Rochelle, N. Y., June 18, 1803. In early life he was engaged in commercial pursuits, which he relinquished at the age of 19 to devote himself to painting. Having acquired some reputation as a copyist, he visited Italy, whence after a 3 years' residence he returned home in 1827. For several years he practised his art in New York, and in 1834 succeeded Charles R. Leslie as instructor in drawing at the military academy at West Point, which office he still holds. Among his productions are "Red Jacket," "The Antiquary introducing Lovel to his Womankind," "Bourbon's Last March," "The Landing of Hendrik Hudson," "Columbus before the Council of Salamanca," "The Embarkation of the Pilgrims," now in the rotunda of the capitol at Washington, and the "Indian Captives," owned by the Boston Athenæum.

WEIR'S CAVE. See Cave.

WEISHAUPT, Adam, the founder of the order of the Illuminati, born in Ingolstadt, Feb. 6, 1748, died in Gotha, Nov. 18, 1830. He was educated in his native place, where he became in 1772 extraordinary professor of law, and in 1775 professor of natural and canon law. His appointment to the latter post aroused the jealousy of the clergy, more especially of the Jesuits, as after the suppression of their order he became their bitter enemy, although he had been educated by them. Here he formed the plan of uniting a large number of men together to sustain certain peculiar views (see Illuminati), and, as in his position as professor he acquired much reputation, and as students preparing for all professions attended his lectures, his instruction room soon became a nursery of his doctrines. In 1785 he was obliged to leave Ingolstadt, and retired to Gotha, where he was afterward made councillor of state by the duke. His most important writings are: *Apologie der Illuminaten* (Frankfort and Leipsic, 1786); *Das verbesserte System der Illuminaten* (1787); *Pythagoras, oder Betrachtung über die geheime Welt- und Regierungskunst* (Frankfort, 1790); *Materialien zur Beförderung der Welt- und Menschenkunde* (3 vols., Gotha, 1850); *Ueber Staatsausgaben* (Landshut, 1820); and *Ueber das Besteuerungssystem* (1820).

WEISS, Christian Samuel, a German mineralogist, born in Leipsic, Feb. 26, 1780. He was educated at the university of Leipsic, and subsequently became a pupil of Werner at Freiberg. In 1808 he was appointed professor of physics at Leipsic, and in 1810 professor of mineralogy at Berlin. He is the author of a treatise *Ueber die natürlichen Abtheilungen der Krystallisationssysteme*, which has contributed much to the development of the science of mineralogy; and of papers published among the transactions of the natural philosophy society of Berlin. He has educated many eminent mineralogists.

WEISSE. I. Christian Felix, a German miscellaneous author, born in Annaberg, Saxony, Jan. 8, 1726, died in Leipsic, Dec. 16, 1804. He was educated at the gymnasium of Altenburg, in 1745 went to Leipsic, where he made the acquaintance of Lessing, and in 1751 published a drama entitled *Die Matrone zu Ephesus*. In 1751 he became tutor to a count of Geyersberg, with whom he lived several years in Leipsic, working industriously for the theatre, at first in tragedy, in which he was unsuccessful, and afterward in comedies, vaudevilles, and operas. In 1758 he published *Scherzhafte Lieder*, and in 1760 become editor of the *Bibliothek der schönen Wissenschaften*, a periodical of importance in the literary history of Germany during the 18th century. In 1761 he published *Amazonienlieder*, and the year following was made receiver of taxes in Leipsic, which office he held until his death. He next turned his attention to the composition of books on domestic education, and his *A-B-C- und Lesebuch für kleine Kinder* (8vo., Leipsic, 1772) and *Kleine Lieder für Kinder* attained an extraordinary popularity. In 1775 he began *Der Kinderfreund*, which was succeeded by *Briefwechsel der Familie des Kinderfreundes*, both of which periodicals had a great circulation. His works for children have been translated in part into most of the European languages. Among his numerous works are: *Lyrische Gedichte* (3 vols., Leipsic, 1772); *Komische Opern* (3 vols., 1777); and *Lustspiele* (3 vols., 1783). His autobiography was published in 1806. In 1826 a centennial celebration of his birth was held at Annaberg and Leipsic, and in the former place a school for poor children was founded, which received the name of *Weissenanstellung*. II. Christian Ernst, a German jurist, son of the preceding, born in Leipsic, Nov. 19, 1766, died Sept. 6, 1832. In 1796 he became extraordinary professor of law in the university of Leipsic, in 1800 associate judge of the supreme court, in 1805 ordinary professor of feudal law, and in 1813 of criminal law. He published various important works, historical and juridical. III. Christian Hermann, a German philosopher, son of the preceding, born in Leipsic, Aug. 10, 1801. He became a disciple of the philosophic systems of Schelling and Hegel, and in 1828 was appointed extraordinary professor of philosophy in Leipsic, resigned in 1837, and lived for some time in literary retirement on his estate at Stötteritz near Leipsic, but in 1845 became ordinary professor of philosophy in the university. His works are numerous, and since 1832 he has been very active as a journalist.

WELBY, Amelia B., an American poetess, born in St. Michael's, Md., in 1821, died in Louisville, Ky., May 3, 1852. Her maiden name was Coppuck, and when about the age of 14 her father removed to Lexington, Ky., and subsequently to Louisville; and in 1838 she was married to George B. Welby, a merchant of the latter city. She gained considerable literary reputation at an early age by poetical contributions, first published in the "Louisville Journal" under the signature of Amelia. These were collected and published in a small octavo volume at Boston, which passed rapidly through several editions. A larger collection of her poetical works appeared at New York in 1850, with illustrations by R. W. Weir.

WELCKER, Friedrich Gottlieb, a German archæologist, born in Grünberg, in the grand duchy of Hesse, Nov. 4, 1784. He was educated at Giessen, and went in 1806 to Rome, where he remained two years. He was afterward professor at Giessen and Göttingen, and since 1819 has been professor of philology and chief librarian in the university of Bonn. He was tried for sedition in 1826 and again in 1832, but both times acquitted. His writings on philological and archæological subjects have been very numerous. Since 1834, in conjunction with Näke, he has been one of the editors of the *Rheinisches Museum für Philologie*. He is also the founder of the art museum in Bonn. —Karl Theodor, a German political leader, brother of the preceding, born at Oberofleiden, Upper Hesse, March 29, 1790. He studied law in Giessen and Heidelberg, wrote while still a student a treatise entitled *Die letzten Gründe von Recht, Staat und Strafe*, and also formed a student league. In 1814 he became extraordinary professor in Giessen, joined the army as a volunteer, and went subsequently as professor to Kiel, where he was concerned in writing the *Kieler Blätter*. Afterward he went to Heidelberg, and in 1819 was called to Bonn, where he was involved in the same suspicion as his brother, but was acquitted. In 1823 he went to Freiburg in Baden as professor of law. In 1830 he sent to the German diet a petition for the freedom of the press, which excited great feeling; and in 1831, having become a deputy to the upper chamber of Baden, he brought in several motions for the same object, and founded along with others the liberal journal *Der Freisinnige*, for articles in which he was arrested and imprisoned, but acquitted. He now undertook with Rotteck the editing of the *Staats-Lexikon* (12 vols., Altona, 1834; 2d ed., 1846-'8), was in 1840 reinstated in his professorship, from which he had been suspended, but in Oct. 1841 was again suspended after a triumphal journey into northern Germany. He now went to Heidelberg, and was again tried for sedition and acquitted. In 1848 he was elected deputy to the German national assembly, in the proceedings of which he bore an important part, and was sent on various diplomatic missions, but in 1849 withdrew from that body. In 1850 he was again elected to the lower chamber of Baden.

WELDING, the name given to the process in which two pieces of the same metal, at a suitable temperature, are made to unite so intimately and permanently as to form sensibly but one mass, showing no appearance of the junction; and sometimes, also, to that property in certain metals by virtue of which separate pieces of each are capable of thus uniting. So far as yet determined, the weldable metals are very few. Clean surfaces of the metals of the alkalies potassium and sodium weld under pressure only, at ordinary temperatures; but the tendency of these to oxidize at the same temperatures renders the property in them of no practical value. The statement often made that platinum is susceptible of welding is erroneous. Iron is the only metal in case of which, thus far, the property and operation of welding have assumed importance. The process requires that the two pieces of the metal to be joined shall be heated to whiteness—60° to 90° of Wedgwood—and that then the surfaces to be applied, being perfectly clean, shall be brought together and compacted by sharp and rapid blows of the hammer. Technically, the operation is often called that of "shutting together" or "shutting up" of the two pieces of metal. The preparation for welding consists in advancing the metal by heat so far toward the fluid state that, though still a solid, it shall acquire a degree of adhesiveness. But at the high heat required, the metal rapidly oxidizes, and the scale of oxide which forms upon the surface, being incapable of the same adhesion with the metal, must if retained render the joint imperfect and weak, or prevent the union altogether. Sand (silica), however, combines at the temperature resorted to with the oxide of iron, playing the part of a flux; that is, the resulting silicate of iron is highly fluid, and while it spreads over and protects the surface from further oxidation, it also readily separates from the surface, and can thus be made to leave the metal clean at the moment required. The operation of welding is one of considerable nicety. The skilful blacksmith, about to weld, carefully watches the effect of the fire upon the bars to be joined, and when these begin to burn off in vivid sparks, he and his assistant each withdraw one of them, roll it in sand, or sprinkle sand or borax upon it; and then striking the pieces forcibly across the anvil to detach any loose cinders, the two men lay together the surfaces to be united, the smith incorporating them by a few brisk blows with the hammer in his right hand; the assistant then, releasing his hold, seizes a sledge hammer with which he finishes the work. The end of the joined bar formed is then jumped upon the anvil, and struck endwise, to test the soundness of the junction, and to enlarge the part if reduced in thickness during welding. The process is sometimes performed by rolling together the ends of bars or the edges of plates, first properly heated. A method of manufacturing welded iron tubes by joining in this way the edges of suitable sheets under the action of rollers, was patented by Mr. T. H. Russell, of Handsworth, Eng., in 1836. Mr. Nasmyth has lately called attention to the circumstance that, in the ordinary modes of welding, unless the utmost care be exercised, more or less of the vitrified oxide of the metal is sure to be shut up within the joint, the results being a defective junction, with liability to breaking at any unexpected moment. If the surfaces to be adapted are in any degree hollowing, some of the vitrified scale is certain to be retained; and the only means that can be depended on for averting the dangers arising from such imperfection, consists in forming the surfaces to be brought together in all cases slightly convex, so that they shall meet first along a middle line, and thus allow the oxide to be completely squeezed out as they gradually meet outward to the sides.

WELLAND, a river of Canada West, which rises in Wentworth and Haldimand counties, pursues a general E. course, and discharges its waters into the Niagara river above the falls. Its length is about 60 m. It is worthy of notice principally as constituting part of the Welland canal, which forms a navigable connection for vessels of 500 tons between Lakes Erie and Ontario. This canal extends from Port Colborne, Lake Erie, to Port Dalhousie, Lake Ontario; it is 28 m. in length, 45 feet wide at bottom and 81 at top, 9 feet deep, and has 27 locks with chambers from 150 to 200 feet in length and from 26½ to 45 feet in width. Its entire descent by lockage is 330 feet. It has also a feeder branch 21 m. in length, connecting it with Dunnville, and a branch 1½ m. in length from the feeder to Port Maitland.

WELLAND, a S. co. of Canada West, bounded E. by Niagara river and S. by Lake Erie; area, 356 sq. m.; pop. in 1851, 20,141. The surface is mostly level and the soil well adapted to wheat. Capital, Merrittsville.

WELLES, Gideon, an American statesman, born in Glastenbury, Hartford co., Conn., July 1, 1802. He is of Puritan stock, being descended from Thomas Welles, the first treasurer and afterward governor of the colony of Connecticut, who came to Hartford in 1636. Mr. Welles received his early education at the Episcopal academy in Cheshire, Conn., and afterward entered the Norwich university, Vt., then under the charge of Capt. Alden Partridge. Without completing the collegiate course, he commenced the study of law in the office of the late Chief Justice Williams, and subsequently pursued it under the direction of the Hon. William W. Ellsworth, afterward one of the judges of the supreme court of Connecticut. In 1826 he became editor and one of the proprietors of the "Hartford Times," which under his charge was the organ of the democratic party in Connecticut. His journal was the first which advocated the election of Gen. Jackson to the presidency, and remained during his administration his earnest and efficient adherent. Mr. Welles was a member of the legislature from 1827 to 1835, when he was appointed comptroller of public accounts. He attacked with great severity, both in the legislature and in his journal, the proposed measure to exclude witnesses who did not believe in a future state of rewards and punishments from testifying in the courts; endeavored for years, and with final success, to procure the abolition of imprisonment for debt; assailed the practice of special legislation, and succeeded in procuring the passage of general laws for the organization of banking and other business corporations; and, before the subject had excited general attention, commenced an agitation in favor of low rates of postage. At the close of Jackson's administration Mr. Welles relinquished the management of the "Times," but continued to be one of its principal contributors till the repeal of the Missouri compromise in 1854. In 1836 he was appointed postmaster at Hartford, which office he held till 1841, and in 1842 he was elected state comptroller. In 1846 he was unexpectedly tendered by President Polk the office of chief of one of the bureaus of the navy department, which he retained till the summer of 1849. Mr. Welles had always been a democrat of the Jeffersonian school, opposed to the extension of slavery into new territory; and on the organization of the republican party in 1855 he became identified with it, and was its candidate for governor of Connecticut in 1856. At the national convention in Philadelphia he was appointed a member of the national committee for Connecticut, a post which he yet holds. He was also the chairman of the Connecticut delegation at the Chicago convention in 1860. The "Hartford Press," founded in 1856 as the organ of the republican party in Connecticut, was aided for several years by his pen. He had for nearly 30 years been in the frequent habit of writing leading articles for the "Globe" and "Union" at Washington, and the "Evening Post" in New York. When Mr. Lincoln was inaugurated president in March, 1861, he appointed Mr. Welles secretary of the navy, an office which he still holds.

WELLESLEY, Province of, a British territory situated on the W. side of the Malay peninsula, immediately opposite the island of Penang, of the government of which it forms a dependency. It extends from lat. 5° 10′ to 5° 38′ N., and from long. 100° 11′ to 100° 18′ E., and is bounded N. and E. by the kingdom of Queda, and S. by the Karian river, which separates it from the Malay kingdom of Perak; area, 160 sq. m.; pop. in 1851, 64,801. There are several villages, and the country is watered by 3 rivers of considerable size. The surface consists of extensive alluvial tracts, some undulating ground, and a narrow sandy belt along the sea. Toward the S. the coast is low, with broad mud banks covered with mangrove bushes and flooded at high water. There are extensive tracts of jungle. More rain falls here than in Penang, and the climate is warmer, but not unhealthy. The soil is remarkably fertile, the products being similar to those of Penang. The elephant, rhinoceros, tiger, and many other wild animals are found in the forests. About ⅚ of the inhabitants are Malays, and the remainder Chinese, natives of Hindostan, and a few English. The settlement was formed in 1800.

WELLESLEY, Richard Cowley, Marquis Wellesley, a British statesman, born in Dublin, June 20, 1760, died at Kingston house, Brompton, Sept. 26, 1842. He was the eldest son of Garret, first earl of Mornington, and was educated at Eton and Oxford, where he distinguished himself by his scholarship. His father died in 1781, and the young earl, desirous of advancing the fortunes of his family, entered political life, sitting in the Irish house of lords until the union, and being also elected a member of the British house of commons for the borough of Beeralston. In 1789, during the regency debate, he advocated in the Irish parliament the restriction of the prince's authority during what might be only a temporary malady of his father; and this coming to the notice of George III. upon his recovery, the earl was returned to the house of commons at the next election for Windsor, was appointed a member of the Irish privy council, and made a knight of St. Patrick. Subsequently he became one of the lords of the treasury, in 1793 was sworn in as member of the British privy council, and on Oct. 20, 1797, was created Baron Wellesley in the peerage of Great Britain. On the 4th of the same month he had been appointed to succeed Lord Cornwallis as governor-general of British India, having been for many years previous an active member of the board of control, in which office he had become conversant with the political situation of Hindostan. In May, 1798, he reached India, and found the British affairs in a very unsatisfactory state. The finances of the company were exhausted; the army was deficient in stores and transport trains; the frontier fortresses were without provisions; the troops were few in number, and the safety of the British territory was threatened by the alliance of Tippoo Sultan with the French, whose influence had lately been largely increased by the conquest of Egypt. But the new governor-general soon overcame all obstacles. In October, having strengthened his army, he marched into the territory of the nizam, and forced him to disband his French subsidiary troops. He attempted to gain over Tippoo by negotiation, but failing, ordered Gen. Harris to march into the territory of Mysore from Madras, with an army of 30,000 men, and at the same time Gen. Stuart prepared to cross the Bombay frontier at the head of 6,000 men. On March 27 the former army defeated that of Tippoo at Malaveli, and on May 4 stormed Seringapatam, over which Lord Wellesley's brother, Col. Arthur Wellesley, afterward duke of Wellington, was made governor. Tippoo was killed in the assault, and his territories were divided; and in consideration of his eminent services the governor-general was made, on Dec. 2, 1799, Marquis Wellesley in the peerage of Ireland. He now directed his efforts to developing the commercial interests of India. On Oct. 12, 1800, he made a treaty with the nizam by which the latter ceded to the company the territories he had acquired by the treaties of Seringapatam in 1792, and of Mysore in 1799, amounting to 25,950 square miles, and yielding an annual revenue of £450,000. The rajah of Tanjore also ceded a region of 4,000 square miles, and the Portuguese settlement of Goa was given up. Profitable treaties were also made with the imam of Muscat and the shah of Persia. In 1801 Wellesley sent an expedition under Sir David Baird to take part in the attack upon the French in Egypt; and on Sept. 6 a treaty was concluded with the native prince of Oude at Lucknow, by which the frontier provinces of Oude, amounting to 32,000 square miles, were ceded to England. On July 31, 1801, the sovereignty of the Carnatic was also assumed, the nabob being induced to give up territory amounting to 27,000 square miles, from the foot of the Mysore mountains to the coast of Coromandel. These new accessions brought Wellesley into contact with the powerful Mahratta chieftains, the rajah of Berar, Sindia, and Holkar. The last named prince had lately defeated the peishwa, the nominal head of the Mahratta confederacy, and taken possession of his capital, Poonah. The peishwa fled to Bombay, concluded on Dec. 18, 1802, the treaty of Bassein, and was soon reinstated in possession of Poonah. In the meanwhile common danger united the Mahratta chieftains, between whom and the English war soon broke out. The British army was divided into two bodies. The principal one, numbering 25,000 men, was placed under the command of Gen. Lake, who, early in Aug. 1803, marched from the province of Cawnpore, defeated on Aug. 29 the forces of the enemy under command of the French general Perron, drawn up before Alighur, stormed that fort Sept. 4, and on Sept. 11 again vanquished the enemy at Delhi, which city was surrendered the following day. This was followed by the fall of Agra, and the obstinate and long continued battle of Laswaree, which destroyed the power of Sindia in the northern provinces. Cuttack was also occupied by another British force, and added permanently to the British dominions. The second division of the English army, under Gen. Wellesley, marched into the Deccan, and by the brilliant victory of Assaye and capture of Gawilghur forced the rajah of Berar to submit to a peace. Both he and Sindia made treaties by which 32,000 square miles were ceded to the company. Much complaint was expressed in England, however, not only at the vast expense which these movements entailed upon the company, but at alleged acts of oppression toward the native rulers; and so general was this feeling that Lord Wellesley tendered his resignation to the government, which however was not accepted. In the meanwhile the new accessions of territory brought on hostilities between the English and Holkar early in 1804. In this disasters of the most serious character at first attended the British arms, but were compensated by the victory of Furruckabad on Nov. 17, and the siege and capture of Deeg. The English were repulsed however from Bhurtpoor, and obliged to enter into an accommodation with the rajah of that city. Desultory engagements with Holkar and his allies occupied the remainder of Lord Wellesley's government. In Aug. 1805, he set sail for England, having been succeeded in the governor-generalship by Lord Cornwallis. In the house of commons articles of impeachment were fruitlessly presented against him by Mr. Paull. He took his seat in the house of lords, but stood aloof from party contests. In 1808 he was sent to Spain as ambassador, but was recalled in 1809, and accepted the appointment of secretary of state for foreign affairs in Perceval's cabinet, and held that office until the beginning of 1812, when, dissatisfied with the conduct of the war and the views of the ministry on the subject of Roman Catholic claims, he resigned. In May, 1812, Lord Wellesley was desired by the prince regent to form a coalition cabinet, but soon found the task hopeless, and during the following 10 years acted in opposition to the government. In 1821 he was made lord lieutenant of Ireland, and his decided opinions in favor of Catholic claims led to great disturbances among the people, so that it became necessary in 1822 to impose the insurrection act, and to suspend the habeas corpus act. In spite of much bitter opposition, especially from the Orangemen, Lord Wellesley greatly improved the internal condition of that country. On the accession of his brother, the duke of Wellington, to the head of the English ministry in 1828, he resigned on account of their disagreement on the Catholic question. He accepted office in the ministry of Earl Grey formed in 1830, in 1831 was made lord steward, and in 1833 was again appointed lord lieutenant of Ireland. This office he resigned when Sir Robert Peel became premier, and on the formation of the second Melbourne ministry in 1835 accepted the office of lord chamberlain, but in the course of the same year retired altogether from public life. Lord Wellesley was twice married, his second wife being Marianne, daughter of Richard Caton of Baltimore, granddaughter of Charles Carroll of Carrollton, and widow of Robert Patterson, whose sister was the first wife of Jerome Bonaparte. In 1836 the "Despatches, Minutes, and Correspondence of the Marquis Wellesley during his Administration in India" (5 vols. 8vo.) was published at the expense of the East India company; and his "Memoirs and Correspondence" was edited by R. R. Pearce (3 vols., Lond. 1846). Early in life he published some Latin poems, and in later years a number of pamphlets, principally on matters pertaining to the proceedings of the East India company. By his death without heirs the barony of Wellesley in England and the marquisate of Wellesley in Ireland became extinct. He was succeeded as earl of Mornington by his brother William, Baron Maryborough.

WELLFLEET, a township and village of Barnstable co., Mass., on Cape Cod, 30 m. N. E. from Barnstable, and 95 m. by land and 65 by water E. S. E. from Boston; pop. in 1860, 2,322. The village is situated on the W. side of the peninsula at the head of Wellfleet bay, and has a good and sheltered harbor. The mackerel fishery is conducted more extensively from this port than from any other in Massachusetts, employing over 100 vessels and 1,200 men and boys. The value of the mackerel taken in 1858 was $129,150. It is also engaged to some extent in the whale and cod fisheries. The oyster trade of Boston is principally carried on by the people of Wellfleet, and the coasting vessels of the town bring large freights from the Virginia oyster beds. Salt is produced in the town to the value of $12,000 annually. The town was taken from Eastham in 1763.

WELLINGTON, a W. central co. of Upper Canada, lying N. of the Toronto and Goderich railway; area, 1,237 sq. m.; pop. in 1861, 48,775. It is drained by the Grand river and its affluents. Capital, Guelph.

WELLINGTON, Arthur Wellesley, duke of, a British soldier and statesman, born in Ireland in 1769 (the same year in which Napoleon was born), died at Walmer castle, near Deal, England, Sept. 14, 1851. There is much dispute about his birth. By his own account it took place at Dangan castle, county Meath, May 1; but in the parish register of St. Peter's, Dublin, it is recorded that he was baptized in that church April 30. He was the 4th son of Garret, first earl of Mornington, by Anne, eldest daughter of Arthur Hill, Viscount Dungannon. The family of the earl of Mornington was of English extraction, tracing its descent from the Colleys or Cowleys of Rutlandshire, two of whom emigrated to Ireland in the reign of Henry VIII. Arthur Wellesley was no favorite at home, being looked upon as the dunce of the family. He was sent to school at Eton, and thence removed to the military college of Angers, then under the direction of the celebrated engineer Pignerol. He exhibited no marked proficiency, and probably owed his rapid advancement through the lower ranks of the army more to family influence than to any indications of personal merit. He received his commission as ensign in the 73d in 1787, was lieutenant in the same year, captain in 1791, major in April, 1793, and lieutenant-colonel in the following September. In 1790 he had been returned to the Irish parliament for the family borough of Trim. In June, 1794, he sailed for Belgium in command of his regiment, and served under Lord Moira in the duke of York's unfortunate campaign in Flanders, being assigned the command of a brigade, and selected to cover the retreat when the British army was forced to retire from the country in Jan. 1795. Though he gained considerable reputation by his conduct in this expedition, his experience seems to have left him little taste for a military life, for almost immediately after his return he petitioned to be transferred to the civil service, but the favor was denied him. In the spring of the following year his regiment was ordered to India, where he arrived in Feb. 1797. His brother Richard, earl of Mornington, came out the next year as governor-general, and one of his first acts was to bring to a crisis a long impending war with Tippoo Sultan. Hostilities began in March, 1799, and Col. Wellesley had a conspicuous share in one of the first engagements of the campaign, the victory of Malaveli, March 27. He was at the storming of Seringapatam, and was afterward appointed governor of the territory of Mysore, which fell to the East India company on the dismemberment of Tippoo's empire. In April, 1802, he was gazetted a major-general. When the great Mahratta war broke out, he moved with a column of troops from Hurryhur, occupied Poonah, took the town of Ahmednuggur by escalade, and on Sept. 24, 1803, found himself at Assaye unexpectedly in the presence of a magnificent hostile force of 26,000 infantry, 30,000 horse, and 100 guns, the combined armies of Sindia and the rajah of Berar. Though his own strength did not exceed 8,000 with 17 pieces of artillery, he gave battle, and the Mahrattas were utterly routed. Following up this brilliant success, he despatched a detachment under Col. Stevenson to harass the retreating enemy, and on Nov. 29 again defeated them at Argaum. Gen. Lake had meanwhile gained an important victory at Delhi, and in December a treaty was concluded with Sindia which left the Mahratta power for ever shattered, and transferred to the British some of the richest provinces of India. Gen. Wellesley's services were recognized in various public testimonials, and in England he received the thanks of parliament and was made a knight companion of the bath. Resigning his command at the close of the campaign, he returned home in March, 1805, and was assigned a brigade in Lord Cathcart's intended expedition to the continent. The forces were recalled before any operations had been commenced, and Sir Arthur Wellesley was appointed commander of the troops at Hastings. About this time he entered parliament for the borough of Rye, and in April, 1806, was married to Catharine, 3d daughter of the earl of Longford. On the formation of the Portland cabinet in the following year he accepted the office of chief secretary for Ireland, with the express condition that it should not interfere with his military pursuits or promotion. Accordingly, when the expedition intended for the capture of the Danish fleet at Copenhagen sailed in the summer of the same year, he went with it as commander of a portion of the land forces under Lord Cathcart, and received the thanks of parliament for his services on the occasion. He resumed the Irish secretaryship on his return. In April, 1808, he was promoted to the rank of lieutenant-general, and in the following month was appointed to the command of a considerable force which had been for some time collecting at Cork, destined to assist the people of Spain and Portugal in repelling the invasions of Napoleon. Spain was almost wholly in the power of the French. Portugal was able to oppose to the invaders a more formidable resistance, and Junot's column of 25,000 men at Lisbon found great difficulty in holding their position. Both kingdoms, however, were reduced almost to the extreme of anarchy and bankruptcy. Their troops were destitute of arms and little better than a rabble. Sir Arthur had the single satisfaction of being hampered by no specific instructions from home; nearly every thing was left to his own discretion; only the Tagus and Cadiz were indicated as points to which he should particularly look. He landed his army in Mondego bay, and, emboldened by the news of the surrender of Dupont to Castaños in Andalusia, which would enable the English division in Cadiz to join him, he took the road toward Lisbon. His first movement was to throw himself between the armies of Loison and Laborde, who were endeavoring to unite. On Aug. 17 he came up with Laborde at Roliça, and defeated him after a hot contest. Still advancing along the coast, he halted at Vimieira on the 19th, and was attacked the next morning by Junot, whom he repulsed in great disorder and with considerable loss. In attempting to cut off the English line of retreat the French commander had uncovered his own, and Wellesley was about to seize the opportunity and advance his right wing upon the French base of operations at Torres Vedras, when he was superseded by his superior officer Sir Harry Burrard, who had just arrived from England and reached the field toward the close of the action. Though he would not interfere with the plan of the battle, he forbade any further movement. Sir Harry himself was superseded the next day by Sir Hew Dalrymple, late British commander at Gibraltar. Recognizing the merit of Wellesley's plan, he at once ordered the army to move, but the golden opportunity was lost. A proposal from the French for an armistice was accepted, and this led to the convention of Cintra, by which the French agreed to evacuate Portugal with all their arms and baggage. Sir Arthur received his full share of the opprobrium which the measure encountered in England. So intense indeed was the public dissatisfaction, that government ordered a court of inquiry, which met in November, and after a tedious sitting gave their approval to the convention of Cintra and a compliment to its authors. Wellesley however, dissatisfied with his treatment in the peninsula, had asked to be restored to the Irish secretaryship, and in Jan. 1809 resumed his seat in parliament, where he soon afterward received the thanks of both houses for his services at Vimieira. He had been but a few months in civil life when the government, to the intense displeasure of the whig party, appointed him commander-in-chief of the armies in the peninsula, in place of Sir John Cradock, and in April, 1809, he proceeded to Lisbon. The Portuguese regency immediately created him marshal-general of the armies of Portugal. Affairs in the peninsula had meanwhile assumed a threatening aspect. The British arms had experienced severe reverses; a large part of Spain was in possession of the French; the N. part of Portugal was occupied by Soult with 24,000 men at Oporto, and its E. frontier was threatened by Victor with 30,000 at Merida, and King Joseph at Madrid. The Spaniards and Portuguese however, alone of all the continental nations, continued to resist after their armies had been overthrown by Napoleon and their country occupied. Wellington hoped, by prolonging their resistance until they presented the example of a nation gradually organizing itself for defence, to inspire the rest of Europe with a like patriotic spirit, and by degrees not only to drive Napoleon out of the peninsula, but to shake the whole fabric of his empire. Portugal was selected as the first field of operations, and the first blow was struck against Soult at Oporto. Beresford with a body of Portuguese troops was sent to cross the Douro some distance above the city, and cut off the French retreat eastward into Spain. On May 12 the main body of the British army reached the left bank of the river opposite Oporto, but a little further up the stream. They had no means of crossing. Soult had caused all the boats to be removed to the northern shore, and, confident that the only attempt of the English general to reach him would be by bringing his transports around to the mouth of the river, directed all his attention toward the sea. A British officer, however, had found a skiff which Soult's patrols had overlooked. Crossing in it with a Portuguese priest and a barber, he brought over several barges, and before the movement was discovered a detachment of the guards had occupied a commanding position on the northern bank. The capture of the city was now effected with little difficulty. The French army retreated in disorder, abandoned their guns, stores, and baggage, blew up their ammunition, and, harassed by the pursuing victors, escaped over the mountains northward into Spain. Wellesley now hastened southward to observe Victor, who by commanding the valley of the Tagus prevented the junction of the Spanish armies. He found him at Talavera, with 53,000 men, including the combined forces of Joseph Bonaparte, Sebastiani, Jourdan, and Mortier. To these Sir Arthur was able to oppose 22,000 British, beside 38,000 undisciplined Spanish levies, commanded by the superannuated, impracticable, and ignorant Cuesta. From these troops he received little assistance. "The cavalry," he says, "make no scruple of running off, and after an action are to be found in every village and shady bottom within 50 miles of the field of battle." The infantry were no better: "The practice of running away, and throwing off arms, accoutrements, and clothing, is fatal to every thing except the reassembling of the men in a state of nature, who as regularly perform the same manœuvre the next time an occasion offers." Nevertheless he gave battle to the enemy, and in a series of terrible conflicts lasting two days (July 27, 28) defeated him with heavy loss. The French retreated, but the English were in no condition to pursue, though reënforced the next day by 3,000 of their countrymen. The blunders of Cuesta indeed (who was soon afterward replaced by Eguia) speedily obliged the allies themselves to fall back, and Soult reoccupied Talavera. The condition of the English army was now deplorable. The ministry neglected or refused to forward the most necessary supplies; and the Spanish authorities, though they conferred upon Sir Arthur the title of captain-general of their forces, would not make the faintest effort to save his soldiers from starving. The cavalry horses perished by hundreds for want of food; dysentery raged through the camps; 5,000 men within a short time died in hospital; and of the whole army only the guards, the buffs, two line regiments, and Craufurd's light division were reckoned fit for service. Wellesley fell back to the Portuguese frontier, but with his small force it was evident that even this could not be defended. Distributing his men in detachments for convenience of subsisting, he then began his famous triple line of intrenchments at Torres Vedras, which for a long time was regarded even by the British ministry only as a last means of protecting the capital and covering an embarkation. The whole of the ground was naturally strong, but minute inspection satisfied him that it might be made impregnable. A defensive position 30 miles in extent, flanked by the Tagus on the one side and by the Atlantic on the other, was accordingly strengthened with perfect military science, with lavish expense, and incredible labor—a magnificent conception, which military men have regarded as the grandest production of Wellington's genius, and alone sufficient to stamp him as one of the first of commanders, ancient or modern. On Aug. 26 he was raised to the peerage as Baron Douro of Wellesley and Viscount Wellington of Talavera and of Wellington in the county of Somerset. Napoleon in the mean time, successful in other parts of the continent, was preparing to overwhelm the peninsula by numbers. By the close of the year he had sent 365,000 men across the Pyrénées, and selected from the choicest of this great host two powerful armies which he intrusted to two of his best marshals, Soult and Masséna. The former was directed to overrun Andalusia; the latter was sent against Wellington. The British brigades on the confines of Spain still held their posts. Not even the siege and capture of Ciudad Rodrigo by

Masséna and the investment of Almeida could tempt Wellington from his chosen position until the time was ripe for the execution of his great movement. At last, on Aug. 4, 1810, he issued a proclamation to the inhabitants of all that portion of Portugal which he was not able to protect to evacuate their homes, drive off their cattle, and destroy all stores and provisions that they could not carry with them. Then the whole army fell back toward Torres Vedras, accompanied by crowds of homeless fugitives, who took refuge, some within the defences of Lisbon, others in the provinces remote from the scene of war. Masséna followed, only to find a country laid waste, and to expose his troops to the same sufferings from famine and pestilence which the British had so lately undergone in Spain. At Busaco Wellington offered battle to his pursuer (Aug. 27), and with 25,000 men defeated 70,000 under Ney. The retreat was then continued, and on Oct. 8 the army entered the lines of Torres Vedras, their march having been conducted with little or no loss or irregularity. Two days afterward Masséna, who had pressed forward flushed with the expectation of cutting off the passage of his enemy to the sea, found himself face to face with an impregnable fortress, including from 120 to 150 redoubts, and mounting 600 guns. A powerful British fleet in the Tagus contributed its aid to the defenders, and before the end of October the number of troops within the lines, including Portuguese and Spaniards, was little short of 100,000. With such a force in front, and harassed in the rear by swarms of Portuguese irregulars, his soldiers starving, and his communications with Spain frequently interrupted, Masséna had no choice but to retreat. Wellington followed him across the frontier, then invested Almeida, and during the siege hastened to confer with Beresford near Badajoz, which fortress had just surrendered to Soult. Masséna turned with the intention of attacking the English while their leader was absent, but Wellington came back in time to receive the assault at Fuentes d'Onoro, May 5, 1811, and compel the French to retire without achieving their object. Almeida fell a few days afterward. Portugal was now permanently delivered, and the stage was free for the organization of the native troops and of systems of supply and finance; but before any important offensive operations could be undertaken, the fortresses of Ciudad Rodrigo and Badajoz, which are the doors between Spain and Portugal, must be recovered from the French. By promptitude and secrecy Wellington was enabled to carry Ciudad Rodrigo by assault, Jan. 19, 1812, while Marmont was collecting troops for its relief. For this achievement he was made earl of Wellington, while Spain created him a grandee of the first order, with the title of duke of Ciudad Rodrigo, and Portugal made him marquis of Torres Vedras. He had steadily refused to accept any of the pensions conferred upon him by these two nations in their distressed state, saying "he had only done his duty to his country, and to his country alone he would look for reward." In the mean time secret preparations had been made for the siege of Badajoz, upon which Beresford had already made an unsuccessful attempt. Its capture was achieved by the same rapidity of movement which insured the victory of Ciudad Rodrigo. Soult with a relieving column was only 5 marches distant when the fortress was stormed with fearful carnage on the night of April 6, a feat which by all military maxims ought under the circumstances to have been impossible. Wellington's next step was to prevent Soult from uniting with Marmont or Joseph Bonaparte, by destroying the fortified bridge across the Tagus at Almaraz; and this effected, he moved against Marmont, who fell back, concentrating as Wellington advanced, until he had placed the Douro between them. The English could not cross, so Marmont awaited reënforcements, and as soon as he felt strong enough suddenly concentrated on Wellington's left and began to cross the river. As the English drew together to oppose him, he as suddenly retraced his steps and crossed the river on the right. For 2 or 3 days the two armies now marched and countermarched in parallel lines in sight of each other, Marmont constantly striving to cut off Wellington's communication with Ciudad Rodrigo, or menacing Salamanca, which had lately fallen into the English general's hands. On July 21 both armies crossed the Tormes, and the next morning were drawn up on opposite sides of the hills which skirted the S. bank of that river near Salamanca. To cut off his opponent from Portugal, Marmont extended his left toward the Ciudad Rodrigo road. Wellington met the manœuvre by a rapid change of front to the right, and Marmont, mistaking the movement for a retreat, incautiously extended his left still more in order to intercept the British at the road. Wellington saw his advantage at a glance. "At last," he exclaimed, "I have them!" Instantly strengthening his right, he fell upon the French in front and flank, crushed their weakened left wing, drove back their centre, and after a hard battle turned the defeat into a rout. So rapidly was the action fought, that a French officer described it as "the beating of 40,000 men in 40 minutes." The immediate results of the battle of Salamanca, the most important probably of the peninsular war, were the evacuation of Madrid, which the allies entered Aug. 12, the abandonment of the siege of Cadiz, and the deliverance of Andalusia and Castile from military occupation. The want of money and provisions prevented Wellington from reaping those fruits of his victory which might have followed an attack upon Suchet or Soult. He therefore invested Burgos, with a view of opening a northern line of operations. In this he failed. The siege was begun Sept. 19, and, after 2,000 men had been lost, was raised Oct. 21, in consequence of the threatening movements of the

French armies. Joseph Bonaparte had been joined by Soult, and was marching toward the Tagus. The army Wellington had lately beaten was reorganized and reënforced, and he had no choice but a retreat to Portugal. In this painful march of nearly 200 miles, during which the troops suffered almost every privation and lost heavily by all kinds of casualties, his consummate generalship was shown more signally perhaps than during any other part of his career. At last he halted on the banks of the Aguada, and undertook a thorough reorganization of his forces. In England the news of the failure before Burgos and the evacuation of Spain was followed by the severest censure of Lord Wellington's conduct. The press was almost unanimous in abusing him; his enemies counted a strong party in parliament; even the ministry, though it recognized his services, gave him but a niggard support. The prince regent however created him a marquis; parliament granted him £100,000 (afterward increased to £200,000) for the support of this dignity; and reënforcements, especially of cavalry, which had long been wanting, were at last sent to him freely. The Spaniards and Portuguese, too, had become useful soldiers under his control, so that in 1813 he was enabled to resume offensive operations at the head of 200,000 men—the best army, as a whole, that England had ever placed in the field. The effective force of the French was slightly larger. They no longer surrounded him, as in the previous campaigns, but stretched across Spain from Valencia on the E. to Galicia on the N. W. Wellington's first movement was against King Joseph at the centre of this line on the Douro. Forcing him back gradually across the Ebro and toward Biscay, he then changed his base of operations from Portugal to the N. coast of Spain, and suddenly appeared upon the flank of the retreating French. Joseph determined to make a stand at Vittoria, where, in consequence of Wellington's change of base, he was obliged to draw up his army in such a way that his flank instead of his rear was toward his only remaining line of retreat. The battle was fought June 21. The attack was made by the English at several points simultaneously, and before night the French were flying in the utmost disorder toward Pampeluna, leaving enormous quantities of plunder, baggage, supplies, and artillery in the hands of the victors. The main army was driven into the Pyrénées; all Spain except Catalonia and Aragon was free; and, a not less important result of the victory, Austria was induced to join the coalition against Napoleon, at a moment when her determination was of the utmost consequence to both parties in the great European contest. Wellington was now made a field marshal of Great Britain. In February he had been created a knight of the garter; and it has been remarked as a circumstance almost prophetic, that before his great victory of June 21 the Portuguese regency had created him *duque da Vitoria.* The command of the beaten army was now given to Soult. Their two advanced posts were the fortresses of St. Sebastian and Pampeluna. A Spanish force under O'Donnell blockaded the latter; Sir Thomas Graham was ordered to lay siege to St. Sebastian; and the main body of Wellington's army, in order to cover both operations, was pushed forward between them toward the passes of the Pyrénées from Fuenterrabia to Roncesvalles. St. Sebastian, after an assault had been once repelled with heavy loss, and the siege had been for a time abandoned, was taken by storm Aug. 31, and Pampeluna surrendered Oct. 31. In the mean time Soult had been actively engaged with the main body of the allies, but, after a series of battles and manœuvres among the mountain passes, had been driven into France, whither Wellington followed him. Wellington declared that he had never seen such fighting as they had in the Pyrénées. "I began," wrote he to a friend, "on the 25th of July, and excepting the 29th, when not a shot was fired, we had it every day till the 2d of August. The battle of the 28th was bludgeon work." On Oct. 7, by a brilliant and unexpected movement, he crossed the Bidassoa, and finished the operations of the year by cutting off Soult from Bayonne, and blockading that fortress, where 13,000 French soldiers were in garrison. He issued the most stringent orders for the protection of the French population, and finding it impossible to check the plundering propensities of his Spanish allies, he sent them back to Spain. The loss which he thereby suffered in numbers was partly repaid by the good will of the peasantry, who supplied him with provisions and information, and returned under his protection to the homes from which they had fled on the approach of their own countrymen. Having beaten Soult at Orthez, Feb. 27, 1814, he sent Beresford to occupy Bordeaux, and then forced Soult back to Toulouse, which he captured April 10. He had scarcely entered the city when intelligence reached him of the occupation of Paris by the allies, and the consequent termination of the war. On the 30th he left Toulouse for Paris, as ambassador of his sovereign at the court of France, and was received by the illustrious personages there assembled with the highest distinction. About the same time he received the intelligence of his elevation to a dukedom (May 11). From Paris he went to Madrid. On June 14 he took leave of his army at Bordeaux, and returned to England, where a still more cordial greeting awaited him. Those who had most severely assailed his past conduct were now among the first to do him honor. Beside the thanks of both houses of parliament, he received a pension of £10,000. In August he returned to Paris, and in Feb. 1815 replaced Lord Castlereagh at the congress of Vienna, where he was still engaged at the time of Napoleon's return from Elba. He immediately urged upon his government the importance of sending a large force to the Netherlands, and the advice having been acted upon, he was appointed commander-in-chief of the armies of that country, the prince of Orange resigning the chief command to accept a subordinate one under him. He reached Brussels early in April, and fixed his head-quarters there. His right wing under Lord Hill was at Ath, his left under the prince of Orange at Brain-le-Comte and Nivelles; and a strong corps of cavalry under the marquis of Anglesea was quartered near Grammont. His army was the weakest and the worst of the three which were now nearing each other for battle. Its strength on June 15 was 92,000, of whom 25,000 only were British. The Prussian army of Blücher was 117,000 strong, and Napoleon's about 124,000. The line which the allies sought to guard extended from Liége to the sea. Blücher undertook the defence of the Sambre and Meuse to a point beyond Charleroi, and Wellington distributed his army from the extreme Prussian right to a point beyond the Scheldt. There were three great roads by which Napoleon could advance, that by Charleroi, and those by Mons and Tournay on the duke's right. Wellington, expecting him by the latter two, made his most formidable preparations in that quarter, throwing his cavalry and most of his English troops toward the right; but Napoleon chose the Charleroi road, a choice which the duke never ceased to consider a blunder. The often repeated story that the news of the attack took Wellington by surprise on the 15th, while he was attending a ball given by the duchess of Richmond in Brussels, is incorrect. He had been informed of it as early as 3 in the afternoon, and the same evening moved his whole army to the left, with the exception of the reserves, which he kept in Brussels until 4 o'clock the next morning. In order not to alarm the citizens or to encourage the numerous partisans of the French in Brussels, he attended the ball, but gave private orders to his staff to depart at an early hour; and toward morning he himself went out and rode after the column to Quatre Bras. (See WATERLOO.) During the battle he exposed himself almost recklessly. While attempting to rally a body of Brunswick hussars he was carried away by the tide of fugitives; and the French lancers charging at the same moment, he only escaped by the speed of his horse, leaping him across a ditch in which the 92d highlanders were lying. On June 21 the victorious armies of Wellington and Blücher crossed the French frontier and marched upon Paris. They nowhere encountered serious opposition until they reached the capital, where Blücher experienced some resistance; but as soon as Wellington arrived an armistice was agreed upon. In regard to the final disposition of Napoleon's person, the duke wrote to a friend: "Blücher wishes to kill him, but I have advised him to have nothing to do with so foul a transaction; if the sovereigns wish him to be put to death, they should appoint an executioner, which should not be me." He also strenuously opposed the proposals to levy 100,000,000 francs upon the city of Paris, deface some of the public monuments, and destroy the bridges of Jena and Austerlitz. "He acted like an ally with Louis XVIII.," says Lamartine, "having acted like a conqueror with Napoleon." During his residence in Paris several attempts were made to assassinate him, but his just and conciliatory course toward the French nation was soon more generally appreciated. In Great Britain his popularity was almost unbounded. Honors of every sort were heaped upon him, and in 1817 the mansion and estate of Strathfieldsaye, in Hampshire, was purchased at a cost of £263,000 and presented to him as a gift from the nation. After the congress of Aix la Chapelle in 1818, at which he represented Great Britain, he returned home, and was appointed master-general of the ordnance, in which capacity he abolished in the course of two years 68 useless offices. In Oct. 1819, he was gazetted governor of Plymouth. He was one of the British plenipotentiaries at the congress of Verona in 1822, in which he advocated non-intervention in the affairs of Spain, afterward going to Paris to persuade the French king to forego his designs upon that country. He was more successful in 1826 in his mission to St. Petersburg to induce the czar Nicholas to refrain from making war upon Turkey, and to agree to the mediation of England between Turkey and Greece. On the death of the duke of York in Jan. 1827, he was appointed general commanding in chief. In politics he was a conservative of the old school, with a bitter dread of democratic encroachment, to which he attributed the necessity for most of the battles he had fought. As master-general of the ordnance he held a seat in the cabinet, which he resigned when Lord Liverpool's ministry was dissolved in Feb. 1827. In the following year, after the death of Canning and the fall of Lord Goderich's ministry, he was requested to form a cabinet. Though he had opposed Catholic emancipation before, he assented to the bill which was passed during his administration, because he believed further opposition to it inexpedient. In sacrificing his long asserted opinions on this subject, he sacrificed also his popularity, which vanished in a moment. Lord Winchilsea went so far as to charge the duke in a public newspaper with "insidious designs for the infringement of our liberties and the introduction of popery into every department of the state." This absurd charge led to a hostile meeting, in which the duke missed his aim and Lord Winchilsea discharged his pistol into the air. On the question of parliamentary reform he would make no concession, and the mob on one or two occasions went to the length of offering him personal indignity and violence. The windows of Apsley house, his town residence, were demolished, and an attempt was made to destroy Strathfieldsaye by fire. In Nov. 1830, he tendered his resignation, and was succeeded by Lord Grey. On the dissolution of Lord Melbourne's cabinet in Nov. 1834, he was consulted by the king, whom he advised to call Sir Robert Peel to the head of affairs. Until Sir Robert's return from Italy, where he was then travelling, the duke performed the functions of premier, beside filling several other offices of state; but soon after the opening of parliament the whigs returned to power, and the duke appeared no more as a cabinet minister. He had been appointed in 1829 lord warden of the cinque ports, and in Jan. 1834 was elected chancellor of the university of Oxford. On the death of Lord Hill, in whose favor he had resigned the rank of commander-in-chief when he became premier, he returned to the horse guards (1843). His death was caused by apoplexy. The public grief at the event was most profound. All the duke's unpopular acts were forgotten; only his services were remembered. A magnificent public funeral followed his remains to St. Paul's cathedral, where they were interred Nov. 18.—In person the duke was of middle height, strongly built, with keen gray eyes, a long face, an aquiline nose, and a generally cheerful countenance. He was active in his habits almost to the close of his life, fond of amusements, but somewhat insensible perhaps to the softer influences of human nature. His firmness often approached severity. His charities were profuse, but unostentatious. One of his most remarkable characteristics was a contempt for all difficulties in the way of any thing he wished to do. "I never in my life," said he, "gave up any thing I once undertook." This characteristic was as conspicuous in the cabinet as in the field. While he was premier, being once assured, in reply to his desire to have some treasury accounts simplified, that the thing was impossible, he remarked: "Never mind; if you cannot accomplish it, I will send you in half a dozen pay sergeants who will;" and the thing was done. Clearness of discernment, correctness of judgment, and rapidity in execution were the principal elements of his achievements in war. He owed little or nothing to the enthusiasm which has so often won battles, for all his greatest exploits were performed under the most discouraging circumstances. At no time were the means at his disposal equal to the ready and certain execution of his plans; he gained every thing by perseverance and resolution. His admirable military despatches are remarkable for straightforwardness and clearness. He exaggerated no success and extenuated no disaster. Thirteen volumes of them were published by Col. Gurwood (1834-'8), and a supplementary collection, including some of his correspondence and memoranda, is now in the course of publication by the duke's son, the 9th volume of which appeared at London in 1862. Among the best biographies of Wellington are those of W. H. Maxwell (3 vols. 8vo., London, 1839-'41) and of the Belgian Capt. Brialmont, translated with emendations and additions by the Rev. G. R. Gleig, chaplain general of the forces (4 vols., London, 1858).

WELLS, a N. E. co. of Indiana, intersected by the Wabash river; area, 372 sq. m.; pop. in 1860, 10,884. It has a rolling surface, and the soil is very fertile. The productions in 1850 were 50,289 bushels of wheat, 148,565 of Indian corn, 20,089 of oats, and 7,601 lbs. of wool. There were 12 grist mills, 9 saw mills, 2 newspaper offices, 9 churches, and 1,510 pupils attending public schools. Large numbers of live stock are raised. There is an abundance of excellent timber. Capital, Bluffton.

WELLS, Horace, an American dentist, one of the claimants of the discovery of anæsthesia, born in Hartford, Windsor co., Vt., Jan. 21, 1815, died in New York city, Jan. 24, 1848. He was educated at the academies of Bellows Falls, Vt., Hopkinton and Amherst, Mass., and Walpole, N. H. In 1834 he commenced the study of dentistry in Boston, and after a time opened an office there, but removed in 1836 to Hartford, Conn., where he soon gained a lucrative practice. At an early period in his practice he had considered the possibility of administering some anæsthetic to prevent pain in dental operations. He experimented upon himself with several of the narcotics, but without satisfactory result. As early as 1840 the use of nitrous oxide gas occurred to him, but he had never seen it administered, and there was then in Connecticut a strong distrust of it from an unfortunate result which had followed its administration in New Haven several years before. On Sept. 10, 1844, Mr. G. Q. Colton lectured in Hartford and administered the nitrous oxide gas to several persons, one of whom under its influence bruised himself severely by falling over some benches, but was quite unconscious of pain. Dr. Wells observed this, and at once declared his belief "that a man, by taking that gas, could have a tooth extracted or a limb amputated, and not feel the pain." The next day he tested the matter in his own person, having a large molar tooth extracted without the slightest pain. He followed this by the successful administration of the gas in 12 or 15 cases of extraction of teeth during the autumn of 1844, and other dentists of the city administered it in their practice with like success. In Dec. 1844, he visited Boston in order to lay his discovery before the medical faculty of that city. He made it known to Drs. Warren and Hayward, and also to the distinguished chemist Dr. C. T. Jackson, and to Dr. W. T. G. Morton, a practising dentist and a former pupil of his. Dr. Warren invited him to address his medical class on the subject, and he did so, but was too diffident to make a very satisfactory impression. He was invited to extract a tooth for a patient under its influence in the presence of the medical class. The patient did not inhale enough of the gas to produce unconsciousness, and as he said he felt some pain, the medical students hissed the dentist and declared his discovery an imposition. In the previous month he had entertained the idea of substituting sulphuric ether for nitrous oxide gas, as more portable, convenient, and easily administered; but the administration of it in a surgical case of Dr. E. E. Marcy proving unsuccessful, he abandoned its use, and continued as he had opportunity to use the nitrous oxide. On the application of Drs. Jackson and Morton, in Oct. 1846, for a patent as the joint discoverers and inventors of anæsthetic remedies, dating their discovery Sept. 30, 1846, Dr. Wells remonstrated with them, and stated the results of his own experiments, as well as the testimony of the surgeons and physicians of Hartford to their success. In December of the same year Dr. Wells sailed for France, to lay his discovery before the medical profession, and succeeded in convincing the medical society of Paris that he had made a valuable discovery, as is shown by resolutions adopted by them after a discussion of three days. In the spring of 1847 Dr. Wells returned to America, and on March 30 published in a small pamphlet "A History of the Discovery of the Application of Nitrous Oxide Gas, Ether, and other Vapors to Surgical Operations," in which he stated the results of his experiments as above related, and sustained them by several affidavits. The attacks which were made on him in the controversy which ensued on the subject gave him much anxiety, and further impaired his already enfeebled health, and, together with his zealous experiments on his own person of the effects of chloroform, produced mental aberration. He had removed to New York city some months previous, and was there arrested, charged with throwing vitriol on the clothes of women in the street; and the arrest causing an aggravation of his mental disorder, he committed suicide. In 1853, an application having been made to congress by Dr. Morton and subsequently by Dr. Jackson for a grant of $100,000 as a reward for the discovery of etherization, a report giving a large mass of evidence in regard to Dr. Wells's claims was drawn up by the Hon. Truman Smith, of the U. S. senate, one of the committee, which was subsequently published in a separate volume, under the title of "An Examination of the Question of Anæsthesia" (New York, 1860).

WELLS, William Charles, a British author and physician, born in Charleston, S. C., in May, 1757, died in London, Aug 28, 1817. He was sent by his parents to Scotland to be educated, and a few years after his return to America emigrated with his family, who were tories, to Great Britain. He studied medicine at the university of Edinburgh, where he was graduated in 1780; and after serving as surgeon to a Scotch regiment in Holland, and making a brief visit to America, he established himself in 1785 as a physician in London. In 1790 he became physician to the Finsbury dispensary, and in 1795 assistant physician, and in 1800 physician to St. Thomas's hospital. He published several papers on the contractility of muscles in animals, on the color of blood, and on vision, but is best known by an "Essay on Dew" (1814). Frequent exposure to the night air brought on a disease which shortened his life. He left an autobiography dictated during his last illness, which comes down to within a few days of his death.

WELLWOOD. See Moncreiff.

WEN, a sarcomatous or fleshy tumor, attached to the body by a peduncle. It may grow from almost any part of the body; it is movable, firm, inelastic, of slow growth, and gives no pain unless from its weight, or by pressure on neighboring parts. In warm countries wens sometimes attain an enormous size, weighing 50, 70, or even 100 lbs. Cutting out is the only effectual way of treating them.

WENCESLAS, or Wenzel, Saint, duke of Bohemia, born in 908, assassinated in 936. He was the son of Duke Wratislaw and his pagan wife Drahomira. His father's mother, Ludmila, brought him up in the doctrines of Christianity, but from his mother, by whose order Ludmila was assassinated, he suffered great persecution. At the death of his father (921) he was a minor, but as his mother during her regency cruelly persecuted the Christians, Wenceslas was elected duke in 927. At a diet at Worms the emperor Otho I. offered to Wenceslas the royal crown of Bohemia, but he refused it, and only asked for the relics of St. Vitus and St. Sigismund of Burgundy, which he had deposited at Prague. Discontented grandees, who hated him on account of his zeal for the introduction of Christianity, plotted against his life with his mother Drahomira and his brother Boleslaw. He was invited by Boleslaw to one of his castles, and while praying in the church during the night he was assassinated at the instigation of his mother. Boleslaw is said to have been converted by miracles happening at the grave of Wenceslas, and to have deposited his relics in the church of St. Vitus at Prague, where they are still exhibited. The emperor Otho I., in consequence of the murder of Wenceslas, invaded Bohemia and forced Boleslaw to introduce Christianity. The Roman Catholic church commemorates Wenceslas on Sept. 28.

WENCESLAS, or Wenzel, a German emperor, born in Prague in 1361, died there in 1419. The eldest son of Charles IV. and his 3d wife Anna, he was crowned king of Bohemia in his 3d year and married in his 10th, and in his 17th succeeded his father on the imperial throne, though he was never crowned at Rome. Having vainly endeavored to restore order and peace in his empire, which was torn by social dissensions and conflicts between cities and nobles, he betook himself to dissipation. In a diet at Eger in 1389 he abandoned the cause of the cities, which he had before favored, and soon after annulled all debts due to Jews on the payment to himself of from 15 to 30 per cent. of the amount; the mob of Prague having slaughtered

3,000 Jews, he also confiscated to his own use the property of the victims. He compelled the Bohemian nobles to return without payment the estates of the crown, on the pledge of which they had loaned money. John Nepomucen he tortured with his own hand, and then threw him bound into the Moldau. He was seized and imprisoned at Prague by a conspiracy among the nobles to which his brother Sigismund of Hungary was a party, but was set free at the instance of the German princes. After his release he practised new enormities of violence, and also relieved his pecuniary distress by creating Giovanni Galeazzo Visconti duke of Milan in consideration of 100,000 golden florins. In the controversy between the popes and anti-popes, he adhered to the cause of the former until he finally united with France to urge the abdication of Boniface IX. and Benedict XIII. in order that a new pope might be chosen in place of the two. Hereupon a number of powerful German princes, who had hitherto befriended him as a friend of Boniface, became his enemies, and formally deposed him at Frankfort in 1400, as did Boniface in 1403. New troubles in Bohemia resulted in his being seized again by his brother Sigismund and imprisoned for 10 months in Vienna. He favored the Hussites in Bohemia, out of hatred against the Catholic clergy, but was unable to save the life of Huss. In 1410 he abdicated all claims to the imperial dignity in favor of Sigismund, and leaving the government of Bohemia to the local diets, he gave himself up to drinking and excesses till he died of apoplexy. He was a weak, cruel, and sensual man.

WENDS, the name of a Slavic tribe, forming a subdivision of the north-western stem of the Slavi. (See Slavi.) In the 6th century the Wends were a powerful people, extending in N. and E. Germany from the Elbe along the Baltic as far as the Vistula, and southward as far as Bohemia. They comprised: 1, the Obotrits, who formed an independent kingdom in what is now Mecklenburg, but were almost entirely extirpated in the 12th century by Henry the Lion, duke of Saxony; 2, the Wiltzi (Veliti or Lutici), the most powerful and warlike among all the north-western Slavi, who occupied in the 2d century the coast of Prussia, advanced to the mouths of the Oder, and afterward expanded to the west as far as the Elbe, but after the conquest of Brandenburg by the Germans gradually disappeared from history; 3, the Ukeri, Hevelli, and Rhetarians, in the 5 marks of Brandenburg, who were conquered and almost annihilated by Albert the Bear, margrave of Brandenburg; 4, the Luzici in Upper and Lower Lusatia; and 5, the Sorbians, who however are by some writers expressly distinguished from the Wends. The only remnants of the Wends are now to be found in Lusatia, where they still speak their language and retain their old customs and usages. They mostly occupy themselves with agriculture, and are well formed, laborious, docile, and hospitable. Their number amounts to about 150,000, of whom two thirds live in Upper Lusatia and one third in Lower Lusatia. Of the former about 50,000 belong to the kingdom of Saxony, and all the others to Prussia.—The language of the Wends is similar to the other branches of the north-western stem of the Slavic languages, the Polish and the Bohemian. It is divided into the dialect of Lower Lusatia, which is but little developed, and that of Upper Lusatia. The latter is subdivided into the evangelical dialect, near Bautzen; the Catholic dialect, near Kamenz and in the north-west; and the north-eastern dialect. The differences are mostly confined to shades of pronunciation. The stock of words in the present language of the Wends is largely mixed with German elements. Orthography has always been in a very unsettled condition, and especially a subject of controversy between Catholics and Protestants; but in modern times attempts at reconciliation and improvement, made especially by Jordan, have met with approval on both sides. In their publications, the Wends have mostly made use of the German letters. There are 8 vowels, *a*, *o*, *u*, *e*, *i*, all of which are pronounced as in German and Italian, *ó* (between *o* in *note* and *u* in *full*), *ė* (like long English *e*), and *y* (approaching the German *ü*). Of consonants there are 32: *j* (*y* consonant), *w* (*v*), *ẃ* (*v* soft), *b*, *b́* (soft), *p*, *ṕ* (soft), *m*, *ḿ* (soft), *n*, *ń* (soft, Fr. *gn*), *l*, *ł* (like *v*), *r*, *ŕ* (soft), *z*, *ź* (Fr. *j*), *s*, *š* (*sh*), *d*, *dz*, *dź* (*dsh* soft), *ds*, *t*, *c* (*tz*), *č* (*tch* soft), *ć* (*tch*), *ts*, *h*, *ch* (*k*), *g* (hard), *k*. There is no article. The substantives are of 3 genders, masculine, feminine, and neuter. Substantives ending in a consonant are mostly masculine, those in *a* and *i* feminine, and those in *o* and *e* neuter. There are 7 declensions, 2 for the masculine, 3 for the neuter, and 2 for the feminine. The language has a dual number. There are 7 cases, viz.: nominative, accusative, genitive, dative, locative (to express the relation of *in*), instrumental (to express the relations of *by* and *with*), and vocative. The adjectives end in *y*, *i* (masculine), *a* (feminine), *o* and *e* (neuter). The comparative is formed by the termination *iši*, and in order to form the superlative the syllable *naj* is placed before the comparative. The personal pronouns are irregular; the others are declined like adjectives. The verb has 6 tenses, present, imperfect, perfect, pluperfect, future, and future perfect; 5 moods, indicative, subjunctive, optative, imperative, and infinitive, beside a gerund; and 3 participles, present and perfect active, and perfect passive. There are grammars of the Wendish language by Ticinus (Prague, 1679), Matthäi (1721), Seiler (Bautzen, 1830), and Jordan (Prague, 1841).

WENSLEYDALE, James Parke, baron, an English judge, born at Highfield, near Liverpool, March 22, 1782. He was educated at Trinity college, Cambridge, and in 1813 was called to the bar at the Inner Temple. After a highly successful professional career, he was in 1828 made a puisne justice of the court of king's bench, whence in 1834 he was transferred to the court of the exchequer, where as Baron Parke he sat with great reputation for 22 years. Upon retiring from the bench in 1856 he was created by the Palmerston ministry Baron Wensleydale of Wensleydale, "for the term of his natural life." This creation was opposed by the house of lords as an infringement of their privileges, and after a memorable contest, in which Lords Campbell and Lyndhurst, the earl of Derby, and others participated, the government receded from their position, and Lord Wensleydale received a new patent creating him Baron Wensleydale of Walton, with the usual remainder to his heirs male.

WENTLETRAP, the popular name of the gasteropod shells of the genus *scalaria* (Lam.), from *scala*, a stair. The shell is long and turreted, with many whorls, close or separated, ornamented with numerous transverse prominent ribs; the mouth is circular and the lip continuous, closed with a horny operculum; the tube of the shell is perfect; the teeth are in numerous longitudinal series. There are over 100 species described, in nearly all the seas of the world, though most beautiful in the tropics, ranging from low water mark to 80 fathoms; most of them are pure shining white, and they emit a purplish fluid when disturbed. The commonest species on the coast of the New England states is the *S. Grœnlandica* (Gould), about an inch long and ⅓ of an inch in its greatest width; it is livid brown or bluish white, with 10 close, moderately convex whorls, and white flattened ribs; it is abundant on the Grand Banks, and is often taken from the stomachs of fishes of the cod family. A species on the coast of California is sometimes used by the natives as ear rings. There are several species on the coast of Europe, and many in the Indian ocean; one of the handsomest is the *S. pretiosa* (Lam.), of the China seas, 1½ to 2 inches long, snow-white or pale flesh-colored, with 8 separated whorls; large and perfect specimens formerly sold for very high prices, sometimes as much as $100, and it is said that in one instance the value has been fixed at 200 guineas; they can now be bought for a few shillings.

WENTWORTH, a S. W. co. of Upper Canada, situated at the head of Lake Ontario, which constitutes its E. boundary; area, 426 sq. m.; pop. in 1861, 31,799. The head waters of Welland river and several smaller streams drain it. It is traversed by the Grand Trunk, the Great Western, and the Hamilton and Niagara railways, as well as by a line from Hamilton to Caledonia. Capital, Hamilton.

WENTWORTH, Charles Watson. See Rockingham.

WENTWORTH, Thomas. See Strafford.

WENTWORTH. I. William, an early colonist of New Hampshire, born in England about 1610, died in Dover, N. H., March 16, 1697. He was a follower of the Rev. John Wheelwright, and with that clergyman and 33 others signed on Aug. 4, 1639, "A Combination for a Government at Exeter, N. H." He removed to Wells, Me., with Wheelwright, and when the latter went to England on the accession of Oliver Cromwell to power, Wentworth removed to Dover, where he was a ruling elder in the church, preaching often and regularly supplying the pulpit at Exeter as late as 1693. He was the progenitor of all the Wentworths of the United States whose origin has been explored. He left 9 sons and one daughter. II. John, lieutenant-governor of New Hampshire, grandson of the preceding, born in Portsmouth, N. H., Jan. 16, 1671, died there, Dec. 12, 1730. He was bred a sea captain. In 1711 he was appointed by Queen Anne a councillor for New Hampshire; in 1713 he became a justice of the common pleas, and in 1717 lieutenant-governor of the province, which was then dependent on Massachusetts, his commission being signed by Joseph Addison. He left 14 children. III. Benning, governor of New Hampshire, oldest child of the preceding, born in Portsmouth, July 24, 1696, died there, Oct. 14, 1770. He was graduated at Harvard college in 1715, became a merchant at Portsmouth, which town he frequently represented in the provincial assembly, was appointed a king's councillor Oct. 12,1734, and when in 1741 New Hampshire was made a distinct province he became its governor (Dec. 13), and so continued until 1767, when he resigned on account of the infirmities of age, having held that office for 25 years. He was authorized by the crown to grant patents of unoccupied land, and in 1749 commenced making grants on the W. side of the Connecticut river, in what is now southern Vermont. These grants were considered by the colonial government of New York as within its domain, and, as Gov. Wentworth stoutly maintained for a time his authority, the collision so famous in the history of Vermont respecting the "New Hampshire grants" ensued. (See Vermont.) Gov. Wentworth exacted heavy fees for his grants of land, and thus accumulated a large property. In all of them he stipulated for the reservation of a lot for an Episcopal church. The town of Bennington, Vermont, was named in honor of him. After his resignation as governor he gave to Dartmouth college 500 acres of land, on which the college buildings were erected. He had three children, who died before him. IV. Sir John, governor of New Hampshire and afterward of Nova Scotia, nephew of the preceding, born in Portsmouth in 1736, died in Halifax, April 8, 1820. He was graduated at Harvard college in 1755, being a classmate of John Adams, was associated with his father Mark Wentworth as a merchant, and in 1765 was the agent of New Hampshire to present petitions in England. While there he gained the friendship of the marquis of Rockingham, through whose influence he was appointed to succeed Benning Wentworth as governor of

New Hampshire, Aug. 11, 1766, and was at the same time appointed surveyor-general of the king's woods in North America, with a salary of £700 and perquisites. He landed at Charleston, S. C., in March, 1768, and travelling northward by land registered his commission as surveyor in each of the colonies through which he passed. He entered on his duties as governor in June, 1768, and on Nov. 11, 1769, just 10 days after the burial of her first husband, married his cousin, Mrs. Frances Atkinson, to whom he had been engaged previous to going to England. He lived in much style, having a house in Portsmouth, which is still in possession of the family, and a country seat at Wolfsborough, where he entertained very liberally. He gave Dartmouth college its charter and endowed it with 44,000 acres of land, and also gave a piece of land to each member of the first graduating class. Being a man of amiable qualities, he maintained his popularity through the incipient stages of the revolution; but when in 1774 Gen. Gage found it impossible to procure carpenters to construct barracks for the royal troops in Boston, and Wentworth endeavored to procure them for him privately from Wolfsborough, the indignation of the people, led by his uncle Hunking Wentworth, rose against him to such a degree that he was obliged to take refuge in Fort William and Mary, and then on board a British ship. In a proclamation on Dec. 26, 1774, he attempted to stay the storm, but in vain; and after another proclamation proroguing the legislature from Sept. 1775, to April, 1776, he went to England, where he remained until peace was declared. He then removed to Nova Scotia and resumed his functions as surveyor of the king's woods, and on May 14, 1792, was appointed lieutenant-governor of that province, which office he resigned in 1808, receiving a pension of £500. He was created a baronet in 1795, and received the degree of LL.D. from Oxford, from Marischal college, and from Dartmouth college. The baronetcy became extinct April 10, 1844, on the death of his only child Charles May Wentworth, a graduate of Oxford, long private secretary to the earl of Fitzwilliam, who died at Kingsand, Devon, leaving the bulk of his property to his cousin Mrs. Gore, the well known novelist. V. John, a patriot of the American revolution, a great-grandson of Elder William Wentworth, born in Dover, N. H., March 30, 1719, died in Somersworth, May 17, 1781. He was usually called "Col. John" or "Judge John" to distinguish him from others of the name. He was for many years a member of the provincial assemblies, was elected speaker in 1771, in 1773 became chief justice of the court of common pleas, and on Jan. 17, 1776, was chosen one of the superior judges, and so continued till his death. He was also colonel of the 2d New Hampshire regiment. Though made a judge, he had never studied nor practised law. As speaker of the legislative assembly at the beginning of the revolution, he exhibited much patriotic firmness and energy. He had three wives and left many children. VI. John, jr., a patriot of the American revolution, son of the preceding, born in Somersworth, N. H., July 17, 1745, died in Dover, Jan. 10, 1787. He was graduated at Harvard college in 1768, studied law, served for many years in the state legislature, was a member of the continental congress in 1778, 1779, and 1781, and in that capacity signed on behalf of New Hampshire the original articles of confederation. He was also a member of the New Hampshire committee of safety, which administered the government during the recess of the legislature. VII. John, an English lawyer, a nephew of Gov. John Wentworth, born in Portsmouth, N. H., in 1768, died in Paris in 1816. He was taken to England about 1775, and educated as a lawyer. He wrote "System of Pleading" (10 vols., London, 1797), was appointed attorney-general of Prince Edward's Island, removed to Portsmouth, N. H., where he married, and remained till 1816, when he went back to London, and soon after died. VIII. John, an American journalist and politician, grandson of John Wentworth, jr., above mentioned, born at Sandwich, N. H., March 5, 1815, was graduated at Dartmouth college in 1836, removed to Illinois in Oct. 1836, and became editor of "The Chicago Democrat," which post he retained till July, 1861. Meantime he studied law, entering in 1841 the law school of Harvard university, in 1843 was elected a representative in congress for the Quincy district, and was reelected three times in succession, and again in 1852 was elected for the Chicago district. He was an adherent of the democratic party and of Mr. Douglas until the repeal of the Missouri compromise, but has since generally sided with the republicans. He was elected mayor of Chicago in 1857 and again in 1860, and also took a leading part in the convention of 1861 to revise the constitution of Illinois.

WERGELAND, Henrik Arnold, a Norwegian poet, born in Christiansand, June 17, 1808, died in Christiania, Aug. 12, 1845. He studied theology at Christiania, where in 1836 he became keeper of the university library. His literary career began in 1827 with the farce of "Ah!" under the assumed name of "Siful Sifadda," which was followed by 12 other dramatic satires of a similar character. In 1828 he published "Sinclair's Death," a tragedy, and in 1830 a religious philosophical poem, "Creation, Man, and the Messiah," in which he advanced heterodox opinions. Subsequently appeared the dramas of "Opium" and "The Asiatic Cholera," the tragedy of "The Child Murderess," the opera of "The Campbells," and the play of "The Venetians;" the two last named are regarded as his most finished pieces. Of his other works, "Jan van Huysum's Flower Garden" and "The Spaniard" are especially celebrated. He had officiated for some time as curate for his father, a prominent clergyman and politician, at Eidswold, when in 1834 he gave up the clerical profession and went to Christiania, where he edited the radical sheet entitled "The Citizen." He was strongly attached to Norway, and bitterly opposed to any union with the Danes or Swedes, and from 1827 to 1837 was constantly engaged in a series of political quarrels. He was long a favorite of the people, and especially of the young men of Norway. In 1838 King Charles John (Bernadotte) paid a visit to Christiania, upon which occasion Wergeland wrote a congratulatory poem, which so pleased the monarch that he conferred upon the poet a pension from his privy purse. In 1840 he was made keeper of the Norwegian archives at Christiania. In 1846 a selection of his lyric works appeared, and the students' society of Christiania has published a collection of his works under the editorial care of H. Lassen (9 vols., 1851 *et seq.*).

WERLAUFF, ERIK CHRISTIAN, a Danish historian and archæologist, born in Copenhagen in 1781. In 1801 he received a place in the royal library, of which he is at present chief librarian. He devoted himself to the study of the Scandinavian languages and literatures, and after having published in 1812 a collection of ancient national songs under the title of *Vatnsdaela Saga ok Sagan af Finnboga hinum Rama*, he prepared the documents for the history of King Sverre (1815), and from 1813 to 1826, with B. Thorlacius, edited the 4th, 5th, and 6th volumes of the history of the kings of Norway, which ended with Snorro Sturleson, and with Engelhardt the 8th volume of the *Scriptores Rerum Danicarum* (1834). Werlauff has illustrated the history and geography of the middle ages by a large number of monographs, and has furnished many valuable contributions to antiquarian journals.

WERNER, ABRAHAM GOTTLOB, a German geologist and mineralogist, born in Wehrau, in Upper Lusatia, Sept. 25, 1750, died in Dresden, June 30, 1817. He was educated at the school of the orphan asylum at Bunzlau, the school of mines at Freiberg in Saxony, and the university of Leipsic. When at the university he published a treatise proposing a methodical terminology for the science of mineralogy (1774), and the next year was appointed professor of mineralogy and inspector of the mineralogical cabinet in the school of mines at Freiberg. In 1792 he was made councillor of the mines of Saxony. He had by this time acquired great celebrity, and was looked upon throughout Europe as the first mineralogist of his time. Visiting Paris in 1802, he was made one of the 8 foreign associates of the academy of sciences, and a citizen of the French republic. In addition to the treatise mentioned above, he wrote *Kurze Classification und Beschreibung der Gebirgsarten* (1787), and *Neue Theorie über die Entstehung der Gänge* (1791). But his fame was acquired not so much by what he wrote as by his lectures, which were attended by great numbers of students from all parts of Europe. He originated the theory now universally admitted, that "the masses or strata that constitute the surface of the globe present themselves in groups or assemblages, the members of which are generally associated wherever they occur, and are so connected as to exhibit a certain unity of character;" and that "the exterior of the earth consists of a series of these formations laid over each other in a certain determinate order."

WERNER, FRIEDRICH LUDWIG ZACHARIAS, a German dramatist, born in Königsberg, Nov. 18, 1768, died in Vienna, Jan. 18, 1823. In 1793 he entered the Prussian civil service as secretary in the finance department, in which capacity he lived for a considerable time at Warsaw, where he produced in 1800 his first dramatic work. In 1805 he was removed to an official situation in Berlin, but relinquished it to travel through Germany, Switzerland, and France. In Dec. 1808, he was at Weimar, when the duke bestowed a pension on him, and at about the same time the grand duke of Hesse-Darmstadt created him a councillor of state. Having become a Roman Catholic, he was ordained priest in 1814, and preached, chiefly at Vienna, until a short time before his death. Of his dramatic works, which are published collectively with his sermons (14 vols., 1841), *Der vierundzwanzigster Februar* is known as the first of the so called "tragedies of fate."

WESEL, a city and fortified town of Rhenish Prussia, on the right bank of the Rhine near the confluence of the Lippe, in the administrative district of, and 32 m. N. N. W. from Düsseldorf; pop. in 1856, 17,200. The Rhine is crossed here by a bridge of boats, and the passage is commanded by Fort Blücher. The city hall, a noble edifice, was erected in the 14th century; the church of St. Willibrod dates from the 12th, and that of Metena from the 15th century. The principal manufactures are of woollen yarns and goods, cottonades, refined sugars, surgical instruments, leather, gloves, tobacco, soap, pianos, distilled liquors, and brass wares. There are several printing and lithographic establishments. It is a free port, and has an active commerce on the Rhine and the Lippe. Its largest trade is in wood and fish.—Wesel is an ancient town, having been a fortified post of the Romans. In 1220, after a long and profitable career as a free city, it fell into the hands of the counts of Cleves. It was one of the towns of the Hanseatic league, and suffered severely in the wars of the Low Countries; from 1614 to 1629 it was occupied by the Spanish forces; in 1712 it was taken by the Prussians, and in 1805 it was captured by Napoleon, who incorporated it at first with the grand duchy of Berg, and in 1806 annexed it to the French empire. In 1813 it was blockaded by the Prussians, and in 1814 ceded to Prussia by the treaty of Paris.

WESER (anc. *Visurgis*), one of the largest rivers of Germany, formed by the union of the

Werra, which rises in Saxe-Hildburghausen, and the Fulda, which has its source in the Rhön mountain in Bavaria. Their junction takes place at Münden in Hanover, and the united stream flows northward in a course of 225 m., and falls into the North sea by an estuary 24 m. wide, 45 m. below the city of Bremen. It passes through parts of Hanover, Hesse-Cassel, Westphalia, Brunswick, Lippe-Schaumburg, the territory of Bremen, and Oldenburg. Its principal affluents are the Aller and its branches, the Wumme and the Leine, on the right, and the Aue, the Delme, and the Hunte on the left. It is navigable to its head streams.

WESLEY, or Westley. I. Samuel, an English clergyman, born in Preston, died April 30, 1735. The date of his birth is given by different authorities as 1662, 1666, and 1668. He was designed by his father, the Rev. John Westley, for a dissenting minister, but early joined the church of England, entered Exeter college, Oxford, as a poor scholar, supported himself by teaching until he obtained orders, served a curacy in London for a year, and was then for another year chaplain on board a man-of-war. He was again a London curate for two years, during which he married and made some reputation as a writer for the press, and afterward obtained a small living in the country. He preached against King James's "Declaration for Liberty of Conscience" (1688), and when the revolution took place is said to have written a book in defence of it. Some time afterward he was presented to the living of Epworth in Lincolnshire. He wrote a heroic poem on "The Life of Christ" (fol., 1693); "Elegies on Queen Mary and Archbishop Tillotson" (fol., 1695); "The History of the New Testament attempted in Verse" (1701), followed by a similar "History of the Old Testament" (1704); a poem on the battle of Blenheim (1705), for which Marlborough made him chaplain of a regiment; a Latin commentary on the book of Job, edited by his eldest son (1735); and a "Treatise on the Sacrament." According to his son John, he wrote the defence delivered by Dr. Sacheverell before the house of lords. II. Samuel, eldest, or at least eldest surviving son of the preceding, born at Epworth in 1690 or 1692, died Nov. 6, 1739. He was educated at Westminster school and at Christchurch, Oxford, and was afterward for nearly 20 years an usher in the former. He took orders, but in consequence, it is said, of his strong tory sentiments, obtained no preferment. He viewed the "new faith" and peculiar conduct of his brothers John and Charles with strong disapprobation, and wrote a letter of remonstrance to his mother when he heard that she had become "one of Jack's congregation." At the time of his death he had been for 7 years head master of Tiverton school. A collection of his poems, containing some remarkable humorous pieces, appeared in 1739. His correspondence with his brother forms the principal part of Dr. Priestley's collection of "Original Letters by the Reverend John Wesley and his Friends" (8vo., Birmingham, 1791). III. John, brother of the preceding, and founder of the religious denomination called Methodists, born at Epworth, Lincolnshire, June 17, 1703, died in London, March 2, 1791. At the age of 17 he passed from the Charterhouse school to Christchurch college, Oxford, in 1725 was ordained deacon, in 1726 was elected a fellow of Lincoln college and appointed Greek lecturer and moderator of the classes, and in 1727 was graduated M.A. From his earliest years he had been of a serious temper, and seems to have entertained an impression, strengthened by various domestic incidents, that he was set apart for some extraordinary work. Soon after his ordination he became his father's curate at Wroote, and while officiating in that capacity was ordained to the priesthood. Returning to Oxford at the end of two years in consequence of a college regulation, he entered with great ardor into a religious association of students, of whom his brother Charles and George Whitefield were prominent members, and to whom the name of Methodists had already begun to be applied. (See Methodism.) Soon afterward he became acquainted with William Law, author of the "Serious Call," whose writings had exerted a powerful influence in the formation of his religious opinions, and the two brothers used to walk two or three times a year from Oxford to the vicinity of London to visit Law at his house. In 1735 John Wesley was induced to go out to Georgia with Gen. Oglethorpe, to preach to the Indians and settlers of the colony. He sailed in October, with his brother Charles and several of his Oxford associates, and landed at Savannah, where he soon found himself at the head of a large and flourishing congregation. The strictness of discipline which he attempted to introduce proved excessively distasteful to the colonists, and his refusal to admit a certain lady to communion involved him in a suit for defamation, which however was never brought to an issue. After a residence of less than two years in America he returned to England, "shaking the dust off his feet," to use his own expression; and immediately upon his arrival (Feb. 1738) he hastened to renew his connection with the Moravians, who had been his fellow missionaries in the colonies. It was a few months after this that, according to his own account, he first reached a knowledge of true Christianity, being converted at a quarter before 9 o'clock on the evening of Wednesday, May 24, at a meeting of "a society in Aldersgate street, where one was reading Luther's 'Preface to the Epistle to the Romans.'" Three weeks afterward he visited the Moravian settlement at Herrnhut, made the acquaintance of Zinzendorf, and was presented to the prince royal of Prussia, afterward Frederic the Great. Shortly after his return to England he became associated with George Whitefield, who had just landed from the new world; and following Whitefield's example, he began early in 1739 the practice of open air preaching. The establishment of lay preaching soon followed, though Wesley did not at first sanction it, and the Methodist movement now began to assume the appearance of a schism in the church. Wesley however never ceased to profess himself a devoted son of the church of England, and died in her communion. Excluded from the pulpits of the establishment, he held public worship in a large building at Moorfields, which, from its having been originally a foundery, was afterward known as "the foundery church." Here he organized his first society, consisting of 8 or 10 persons, who, to use his own language, "came to him and desired him to spend some time with them in prayer, and advise them how to flee from the wrath to come." This was the origin of the Methodist society. From the foundery church, which was afterward converted into a chapel and became the centre of operations, he made long and distant journeys, preaching wherever he went to large multitudes, generally twice every day, and often as many as four times on Sunday. At Kennington common he once preached to 20,000 persons. In July, 1740, he solemnly separated himself from the Moravians, with whom he now found that he disagreed in fundamental points of doctrine, and soon afterward he had a last interview with Zinzendorf, leaving him with feelings so embittered that there seemed not the slightest prospect of reconciliation. Before the close of the year he had a breach with Whitefield, which divided their respective followers into two permanently distinct bodies, though it interrupted only for a short time the relations of personal friendship between the two leaders. Whitefield came to America. Wesley devoted himself to his work in Great Britain with such completeness, that scarcely an hour was abstracted from the cause on which he had set his heart. He seldom travelled less than 40 miles a day, and until near the close of his life, when he used a chaise, usually went on horseback. It is said that not an instance can be found, during a period of 50 years, wherein the severest weather hindered him for a single day. His journeys extended to Ireland, Scotland, and Wales, in each of which countries he preached with great success. He formed societies and placed lay preachers over them, appointed class leaders, and established schools, the most important of which was that of Kingswood, near Bristol, which was designed more particularly for the education of the sons of preachers. The most extraordinary revivals followed his ministry, especially among the poor and destitute in the mining and manufacturing districts. The first Wesleyan conference was held in the foundery chapel in 1744. Beside the two Wesleys, there were present 4 ordained ministers of the church of England and 4 lay preachers. In this, as in all subsequent conferences, Wesley urged the importance of adhering to the established church, but rules of discipline were far more important in his eyes than confessions of faith. "Look all round you," he says; "you cannot be admitted into the Church, or society of the Presbyterians, Anabaptists, Quakers, or any others, unless you hold the same opinions with them, and adhere to the same mode of worship. The Methodists alone do not insist on your holding this or that opinion, but they think and let think; neither do they impose any particular mode of worship, but you may continue to worship in your former manner, be it what it may. Now I do not know any other religious society, either ancient or modern, wherein such liberty of conscience is now allowed or has been allowed since the days of the apostles. Here is our glorying, and a glorying peculiar to us." In 1744, attempting to preach at Taunton, he was silenced by the magistrates. In 1752 he married a widow with 4 children, stipulating that he should not preach one sermon the less nor travel one mile the less on account of his change of condition. The union was unhappy. His wife became jealous, robbed him of his substance, as she said, to prevent him from giving it to bad women, and ran away from him several times. After bringing her back once or twice, he resolved at last to let her go. "*Non eam reliqui*," he wrote in his journal, "*non dimisi*, *non revocabo*—I did not forsake her, I did not dismiss her, I will not recall her." She bore him no children. In 1770 he sent out 4 lay missionaries to America, and thus laid the foundation of the Methodist Episcopal church in this country. After the independence of the colonies was established, finding that the preachers in America demanded ordination, and having satisfied himself that the orders of bishop and presbyter were substantially the same in the early church, he assumed the office of bishop, and with the assistance of other ministers ordained the Rev. Thomas Coke of Oxford bishop of the church in America (1784), empowering him to confer the same office upon Francis Asbury. (See METHODIST EPISCOPAL CHURCH.) In 1780 he established the "Arminian Magazine," and conducted it as long as he lived. It is still published under the name of the "Methodist Magazine." His health had been gradually declining for 3 years, but he made no change in his way of life, and preached until within a week of his death. He passed the last 4 days in praising God. His remains lay for several days at his chapel in the City road, dressed in the sacerdotal robes which he usually wore, and with the old clerical cap on his head and a Bible in one hand. He was buried in the cemetery behind his chapel, many of his followers appearing in deep mourning on the occasion.—Wesley was a man of respectable scholarship and a voluminous writer. Beside a corrected translation of the "Imitation of Christ" (1735), various collections of hymns, chiefly written by his brother, a "History of England," a short "Roman History," "Primitive Physic," and a list of polemical and devotional works altogether too long for enumeration, he published from time to time accounts of his spiritual labors in a series of "Journals," which involved him in controversies with Bishop Lavington and Bishop Warburton. A collection of his writings appeared during his lifetime (32 vols. 12mo., 1773), and another in 1809 (16 vols. 8vo.). His style in the pulpit was fluent, clear, argumentative, often amusing, and well suited to the capacity of his hearers, but never impassioned like Whitefield's. He had a mild and grave countenance, which in old age appeared extremely venerable. His manners were polite and totally free from gloom or austerity. His benevolence was unbounded. He literally gave away all he had, and kept his resolution to die poor. It is estimated that he dispensed in charity during his lifetime $150,000. During the 65 years of his ministry he travelled about 270,000 miles, and delivered over 40,000 sermons, beside addresses, exhortations, and prayers.—His life was written by Dr. Thomas Coke and Henry Moore, to whom all his MSS. were left (8vo., 1792), and by Robert Southey (2 vols. 8vo., London, 1820). See also the "History of the Religious Movement of the Eighteenth Century called Methodism," by the Rev. Abel Stevens, D.D. (3 vols. 12mo., New York, 1859–'62). IV. CHARLES, an English clergyman, brother of the preceding, born at Epworth, Dec. 18, 1708, died in London, March 29, 1788. He passed some years at Westminster school under the care of his brother Samuel, and at the age of 18 entered Christchurch college, Oxford, where he took an active part with his brother John in religious meetings. When John went as a missionary to Georgia, Charles accompanied him, in the capacity of secretary to the governor of the colony. When they arrived in America the brothers took different courses, Charles going with Ingham, one of his Oxford associates, to Frederica. Failing to carry out his strict views of Christian discipline, he returned to Savannah, where he remained for a short time, and then went to Charleston, from which place he sailed for Europe. He preached for a while to large congregations at Blackheath, near London, and after the return of his brother from Georgia entered upon the itinerant ministry. After his marriage in 1749 he confined his labors mostly to London and its vicinity. A volume of his sermons, his journal, and two volumes of his hymns, which possess extraordinary merit, have been published. He left two sons, Charles and Samuel, who were remarkable musicians.

WESLEYAN UNIVERSITY, a literary institution in Middletown, Conn., under the control of the Methodist Episcopal church. The principal buildings now occupied by the university were erected in 1824 for the "American literary, scientific, and military academy" of Capt. Alden Partridge, which was removed to Norwich, Vt., in 1829. The Methodist denomination at that time intended to establish a college somewhere in the eastern states, and, beside offers from several other towns and cities, received a tender of these buildings as a free gift, on condition that an additional endowment of $40,000 should be raised. The offer was accepted, and, the condition being speedily fulfilled, the institution was organized in 1830, chartered by the legislature of Connecticut in May, 1831, and opened for students in the following September. The Rev. Wilbur Fisk, D.D., was elected its first president, and continued in that office until his death in 1839. The Rev. Nathan Bangs, D.D., was elected president in 1841, but resigned in 1842, and was succeeded by the Rev. Stephen Olin, D.D., who held the office till his death in 1851. Dr. Olin's presidency was a prosperous one for the university, and through his exertions the endowment was largely increased. In 1852 Augustus W. Smith, LL.D., who had been a professor in the institution from its organization, was elected to the presidency, which he resigned in 1857. He was succeeded by the present incumbent, the Rev. Joseph Cummings, D.D., previously president of Genesee college, Lima, N. Y. The amount of the present endowment of the university is about $150,000, and measures are now (1862) in progress for its increase. Numerous scholarships have been endowed, securing free tuition, and indigent students are aided in their other expenses. There are 4 prizes awarded during the year. At the organization of the university, at the suggestion of Dr. Fisk, in place of the usual arrangement of college classes, the progress of the student and his ability to pass the rigorous examination required were the only grounds of classification; the student who could pass the examination for the degree of A.B. received his diploma without reference to the time spent in the college. This system was maintained for some years, but has gradually fallen into disuse, and the regular college classes are now maintained, though a student taking a course of English studies only and passing a satisfactory examination may take the degree of bachelor in science, or students may take a select course without receiving a degree. Very few avail themselves of these privileges. During the present collegiate year (1861–'2), 3 only are enrolled as students in the scientific course, and 2 in the select course. The university is well supplied with apparatus, including a fine refracting telescope, transit circle, and astronomical clock, as well as complete philosophical and chemical apparatus and good cabinets of mineralogy, geology, and natural history. The college and society libraries amount in the aggregate to 14,000 volumes. The whole number of alumni according to the last triennial catalogue is 707, of whom 629 are living. Of this number 373 are clergymen. There are now connected with the institution a president and 7 other professors and teachers, and 150 students, of whom 52 belong to the class of 1865.

WESSEL, John, also called Gansefort (Dutch, Goesevort), a theologian who is commonly classed among the "reformers before the reformation," born in Groningen in 1419 (according to others in 1420), died in 1489. He was successively a resident of Cologne, Louvain, Paris, and Heidelberg, sometimes pursuing his studies, sometimes teaching. He passed the latter part of his life in retirement in his native country, part of the time in convents. He was a decided opponent of the scholastic theology, and in intimate relations with some of the prominent humanists, as Agricola and Dr. Höck, yet in his own views strongly leaned toward mysticism. He regarded Christianity as something entirely spiritual, confined to a man's own heart and God. The Scriptures, according to him, are the living source of all true faith; the church is based upon a compact; there is a general priesthood of the rational universe; faith is to be reposed only in an orthodox pope, and not in every council; sin can be forgiven by none but God; excommunication has only an external influence; indulgences refer only to ecclesiastical penalties; the true satisfaction for sin is a life in God; and purgatory is nothing but the purifying influence of a longing after God. After his death some of his works were burned as heretical; his *Farrago Rerum Theologicarum* was published with a preface by Luther (Wittenberg, 1522). The most complete edition of his works is that edited by Lydius (Amsterdam, 1617).

WESSELÉNYI, Miklós, baron, a Hungarian statesman, born at Zsibó, in Transylvania, in 1797, died in Pesth in 1850. He was the son of a distinguished though eccentric Transylvanian patriot. After a brief service in the Austrian army, with which he took part in the last campaign against Napoleon, he returned home in 1818, and placed himself at the head of the agitation against a law respecting landed property, which the Austrian government had issued without the coöperation of the diet. He purchased real estate in several counties, in order to have a vote in the "congregations" (county assemblies), and so successfully organized the resistance to the government, that in 1834 the diet of Transylvania, which for many years had been suppressed, was again convoked. His activity in Hungary proper was no less bold and important. He edited a lithographed journal of the Transylvanian diet, and patronized the lithographed gazette published by Kossuth. In 1837 he was arrested together with Kossuth, and sentenced to 4 years' imprisonment. He was, however, allowed to spend most of the time in a kind of exile at Gräfenberg, during which he wrote his "Appeal" (*Szózat*) to the nation, warning it against the dangers threatened by Panslavism. The amnesty of 1840 restored him to liberty; but he had lost his eyesight, and henceforth took a less prominent part in politics, though he often aided the liberal party with his counsels, and in 1848 took a seat at the table of magnates.

WESSELING, Peter, a German philologist, born in Steinfurt, Jan. 7, 1692, died in Utrecht, Holland, Nov. 9, 1764. After having studied at Leyden and Franeker, he became in 1717 a teacher at Middelburg, in 1723 professor of eloquence at Franeker, and in 1735 professor of ancient literature at Utrecht, where he remained until his death. He prepared excellent editions of *Vetera Romanorum Itineraria* (Amsterdam, 1735), of Diodorus Siculus (2 vols., 1745), and Herodotus (1763), and wrote a number of treatises on classic and Jewish antiquities.

WESSENBERG, Ignaz Heinrich Karl, baron von, a Roman Catholic theologian of Germany, born in Dresden, Nov. 2, 1774, where his father was Austrian ambassador, died in Constance, Aug. 9, 1860. While still a youth he was appointed canon of several cathedral churches, and in 1802 vicar-general of the diocese of Constance, which at the time comprised a considerable portion of western and central Switzerland. He soon became the most ardent and influential supporter of several reformatory movements in the Catholic church of Germany, such as the use of the vernacular at the mass, the reduction of the number of convents, improvement of theological schools, and organization of pastoral conferences. In 1814 Archbishop Dalberg nominated him as his coadjutor in the episcopal see of Constance, but the pope rejected the nomination. After the death of Dalberg in 1817, he was elected by the chapter administrator of the diocese, but was again rejected by the pope. A journey to Rome, which he undertook in order to defend himself against the charges which had caused the papal disfavor, had no result. Rome wished him to resign his ecclesiastical office, but this he declined. His sovereign, the grand duke of Baden, regarded the proceedings of the pope as an insult to the entire German nation, and laid the whole matter before the federal diet. In 1827 the diocese of Constance was dissolved in consequence of a convention between Baden and Rome, and Wessenberg retired to private life. His writings are very numerous. A collection of his poems was published in 6 volumes (Stuttgart, 1834–'44). His last work was *Gott und die Welt, oder das Verhältniss aller Dinge zu einander und zu Gott* (2 vols., Heidelberg, 1857).—A biography of Wessenberg, embracing to a large extent the history of the Roman Catholic church of Germany in the 19th century, has been published by Dr. J. Beck (*I. H. von Wessenberg, sein Leben und Wirken*, Constance, 1862).

WESSEX (that is, West Saxony), one of the most important kingdoms of the Saxon octarchy in England during the 6th, 7th, and 8th centuries. It was founded by Cerdic in 519, under whom it comprised the present counties of Southampton (including the Isle of Wight), Dorset, Wilts, and Berks. One of its sovereigns, Egbert, having obtained an acknowledgment of superiority from the other kingdoms (about 827), has been frequently but improperly called the first king of England.

WEST, Benjamin, an Anglo-American painter, born in Springfield, Penn., Oct. 10, 1738, died in London, March 11, 1820. He was of Quaker parentage, and was born prematurely in consequence of the agitating effect upon his mother of the preaching of one Edward Peckover, an itinerant Quaker minister. In his 7th year he astonished his parents by a drawing executed in red and black inks of the infant daughter of his sister; and thenceforth he took delight in copying from nature birds, flowers, and similar objects, his brushes being made with hairs pulled from the house cat's back, and his colors consisting of red and yellow paints which he was taught by some wandering Indians to prepare, and of indigo with which his mother furnished him. A relative from Philadelphia, having seen these juvenile efforts, sent him a box of colors, with pencils, canvas, and a few prints; and with these materials he composed in his 9th year a picture which 67 years afterward, in the plenitude of his fame, he asserted contained touches never subsequently surpassed by him. He soon after determined to make painting his profession, and, having received a few elementary instructions in Philadelphia, practised his art in that city and the neighboring towns, chiefly as a portrait painter. At Lancaster he executed for a gunsmith, who had a classical turn, a picture of the death of Socrates, which contained the first figure he ever painted from the life. Upon his return to Springfield at the age of 16, the propriety of his following painting as a vocation was, after considerable discussion, conceded by the society of Friends there; but he soon after took a step utterly at variance with the principles of the sect by volunteering under Major Sir Peter Halket to go in search of the remains of Braddock's army. In his 18th year he established himself again in Philadelphia as a portrait painter. Thence he went to New York, where he painted heads at 5 guineas, and occasionally attempted a historical piece. In 1760, through the assistance of some merchants of New York and Philadelphia, he was enabled to visit Italy; and arriving in Rome in July, he was kindly received by Lord Grantham, to whom he had taken a letter of introduction. His portrait of that nobleman, at first generally attributed to Raphael Mengs, attracted considerable attention, which was greatly increased when the circumstances of his birth and artistic education became known, the arrival of a student of painting from the distant wilds of North America being a thing unheard of in Rome. By the advice of Mengs, who became his warm admirer, he made a careful tour of study through the chief Italian art capitals, and at Rome painted two pictures, "Cimon and Iphigenia" and "Angelica and Medora," which were well received. He was also elected a member by the academies of Florence, Bologna, and Parma. In 1763 he proceeded to England on his way to America; but having executed in London some commissions for church dignitaries and influential noblemen, he was induced to take up his permanent residence in that city, where in 1765 he was married to Elizabeth Shewell, a young American woman to whom he had been previously attached, and who joined him in England at his request. A successful picture representing Agrippina landing with the ashes of Germanicus was the means of introducing him to George III., for whom he painted the "Departure of Regulus," and who for nearly 40 years was his firm friend and munificent patron. Commissions thenceforth flowed in upon him from all quarters, and during a career of almost unvarying prosperity, marked by few noticeable incidents, he painted or sketched about 400 pictures, many of which are of great size, beside leaving upward of 200 drawings at his death. His subjects, drawn at first from ancient history, and subsequently from sacred and modern history, were executed with facility, care, and taste, and, as his admirers believed, in the style of the old masters, a circumstance which greatly contributed to the reputation he enjoyed in England during the last century. One of his early pictures, the "Death of Wolfe," may be said to have created an era in the history of British art, from the fact that the figures were habited in the costume appropriate to their time and character, instead of that of the ancient Greeks and Romans, which custom had rendered indispensable in historical pictures. The experiment was considered hazardous, and Sir Joshua Reynolds and others endeavored to dissuade the painter from attempting it. He persevered, however, and Reynolds was one of the first to congratulate him on his success and to confess his own error of judgment. The picture obtained an immense popularity in England, and has been widely known through the fine engraving by Woollett. He painted for George III. a number of subjects taken from early English history, and projected a grand series of works illustrating the progress of revealed religion for the chapel at Windsor castle, of which 28 were executed. After the superannuation of the king the commission was cancelled. He then commenced a series of religious pieces on a grander scale than any thing he had previously accomplished, the first of which, "Christ Healing the Sick," was intended as a present to the Pennsylvania hospital in Philadelphia. It was purchased however for £3,000 by the British institute, and presented to the British national gallery, and a copy with some alterations was sent by West to Philadelphia, where the proceeds of its exhibition enabled the trustees to build an addition to the hospital. The most remarkable picture of this series was "Death on the Pale Horse," from the Revelations, exhibited in London in 1817, and in reference to which Allan Cunningham observes: "As old age benumbed his faculties and began to freeze up the wellspring of thought, the daring intrepidity of the man seemed but to grow and augment. Immense pictures, embracing topics which would have alarmed loftier spirits, came crowding thick on his fancy; and he was the only person who appeared insensible that such were too weighty for his handling." Among his battle pieces may also be enumerated the "Battle of La Hogue," one of the best pictures he ever painted. In 1792 he succeeded Sir Joshua Reynolds as president of the royal academy, declining on the score of poverty the honor of knighthood which the king offered him, but retired from that post in 1802 in consequence of cabals among the members. The chair was occupied for about a year by James Wyatt, the architect, when West was reëlected by the ballot of every member except Fuseli, who voted for Mrs. Lloyd, an academician, on the plea that "one old woman was as good as another." He retained the office until the close of his life. The extraordinary reputation once enjoyed by West was due in no small degree to the facility with which he worked, and to the academic correctness of his designs, the latter quality being one much appreciated by the age in which he lived. He drew well and composed in a tasteful manner, free from exaggeration, but had little invention or force of expression. His pictures are chiefly remarkable for composition, the coloring being of a uniform reddish brown tint, in no respect resembling nature. Few artists have shown so little individuality and such an equality of merit. Many of his works have been engraved by Woollett, Sharpe, Hall, Heath, and others. He was a man of exemplary character, and a kind friend and adviser of young painters.

WEST, Gilbert, an English author, born about 1705, died March 20, 1756. He was destined for the church, and educated at Winchester, Eton, and Christchurch, Oxford; but his uncle, Lord Cobham, giving him a cornetcy in his own regiment, he entered the army. Being one of those selected to be taught foreign languages at the expense of the government, and then to be trained in the diplomatic service, he resigned his commission. He was treated with marked favor by Lord Townshend, secretary of state, but his advancement was prevented by the opposition of his uncle to the government. He now married and retired to Wickham in Kent; but in 1752 he was made a clerk of the privy council, and shortly afterward was appointed by his friend Pitt, now in office, under treasurer of Chelsea hospital. West wrote a poem on the institution of the order of the garter, a "Dissertation on the Olympic Games," and a version of some of the odes of Pindar; but his reputation rests almost entirely upon his "Observations on the Resurrection" (1730), which forms a companion treatise to his friend Lord Lyttelton's "Observations on the Conversion and Apostleship of St. Paul," and is an able argument for the truth of Christianity. Early in life he was an infidel.

WEST, Stephen, D.D., an American clergyman, born in Tolland, Conn., Nov. 13, 1735, died in Stockbridge, Mass., May 15, 1819. He was graduated at Yale college in 1755, and the next year taught a school in Hatfield, Mass., where he commenced the study of theology. In 1757 he was appointed chaplain at Hoosick fort, where he remained a little more than a year. In 1758 he succeeded Jonathan Edwards in the Indian mission at Stockbridge, and, proving acceptable also to the white inhabitants of the town, was ordained as pastor of the Congregational church in Stockbridge in 1759. About 1770 he resigned his charge of the Indians and confined his preaching to the English settlers. In early life he had been an Arminian, but a long and intimate intercourse with Dr. Samuel Hopkins led him about 1770 to become an adherent of the Hopkinsian theology. In 1792 Dartmouth college conferred on him the degree of D.D. He was one of the original trustees of Williams college, and vice-president of the board for 19 years. He published, beside sermons and occasional pamphlets, "An Essay on Moral Agency" (12mo., 1772; enlarged ed., 1794); "Duty and Obligation of Christians to marry only in the Lord" (1779); "An Essay on the Scripture Doctrine of the Atonement" (1785); "An Inquiry into the Ground and Import of Infant Baptism" (1794); "Life of Rev. Samuel Hopkins, D.D." (1806); and "Evidence of the Divinity of the Lord Jesus Christ collected from the Scriptures" (1816).

WEST CHESTER, a township and the capital of Chester co., Penn., situated on the dividing ridge between Brandywine and Chester creeks, 23 m. W. from Philadelphia; pop. in 1860, 4,757. It is surrounded by one of the finest agricultural regions in the Union, has a handsome granite court house, 110 feet long by 60 feet wide, and is noted for its elegant public and private buildings. The bank of Chester county is of white marble, a copy of the Doric portico in the market place at Athens. St. Agnes Roman Catholic church is in the English Gothic style. The houses are built principally of brick, and as well as the streets are lighted with gas. Two railroads connect the place with Philadelphia. It contains an academy, a state normal school, 11 other schools, a cabinet of natural sciences founded in 1826, two public libraries, the agricultural grounds and buildings of Chester co., 4 newspaper offices publishing 2 semi-weekly and 4 weekly newspapers, and 8 churches, viz.: 1 Baptist, 1 Episcopal, 2 Friends', 3 Methodist, 1 Presbyterian, and 1 Roman Catholic. It was established as the county seat in 1786.

WEST INDIES, the name usually given to the vast archipelago of about 1,000 islands lying between North and South America, extending in two irregular lines, which unite at Hayti, from the peninsulas of Yucatan and Florida to the mouth of the Orinoco. They enclose the Caribbean sea, dividing it from the gulf of Mexico and from the Atlantic ocean. They lie between lat. 10° and 28° N. and long. 57° and 85° W., and are divided into 4 groups: 1, the Bahamas, about 500 in number, low flat islands of coral formation, S. E. of Florida, and extending toward Hayti (see BAHAMAS); 2, the Greater Antilles, between the Bahamas and Central America, comprising the 4 great islands of Cuba, Hayti or St. Domingo, Jamaica, and Porto Rico; 3, the Lesser Antilles or Windward islands, extending in a semicircular line from Porto Rico to the mouth of the Orinoco; and 4, the Leeward islands,* lying off the coast of Venezuela, and consisting of Margarita, Tortuga, Buen Ayre, Curaçoa, and several smaller islands. The following table exhibits the area, population, &c., of the larger islands and groups, according to the latest authorities:

Islands.	To whom belonging.	Area, sq. m.	Population.	Capitals.	Pop. of capitals.
St. Domingo, Hayti, or Hispaniola..	W. part, an independent republic.	Hayti, 11,718	560,000	Port au Prince.	30,000
	E. part, a republic protected by Spain.	Dominica, 17,212	200,000	St. Domingo.	15,000
Cuba, Porto Rico, Isle of Pines, and two of the Virgin isles............	Spain.	47,130	1,832,062	Havana (Cuba). San Juan (Porto Rico).	130,000 30,000
The Bahamas, Jamaica, and most of the Windward islands (Trinidad, Tobago, Barbados, Grenada, St. Vincent, St. Lucia, Dominica, Montserrat, Antigua, St. Christopher, Barbuda, Anguilla, most of the Virgin isles, &c.)..............	Great Britain.	13,414	820,792	Spanish Town (Jamaica). Nassau (Bahamas). Port of Spain (Trinidad).	6,000 7,000 12,000
Guadeloupe, Desirado, Martinique, Marie Galante, Saintes, N. part of St. Martin's, all in the Windward group..........................	France.	1,691	256,511	Point-a-Pitre (Guadeloupe). St. Pierre (Martinique).	12,000 30,000
Curaçoa, Buen Ayre, Oruba, Los Roques (Leeward isles); St. Eustatius, Saba, and S. part of St. Martin's (Windward islands)..........	Netherlands.	413	38,600	Willemstad or Curaçoa (Curaçoa).	7,000
St. John's, St. Thomas, and Santa Cruz (Virgin isles)................	Denmark.	110	37,137	Christiansted (Sta. Cruz). St. Thomas (St. Thomas).	5.500 10,000
St. Bartholomew (Windward islands).	Sweden.	35	18,000	Gustavia.	10,000
Margarita, Tortuga, &c. (Leeward islands)..........................	Venezuela.	500	20,000	Asuncion (Margarita).	
Total..............................		92,223	3,783,102		

The surface of the islands is very diversified. The Bahamas are low and flat, and entirely of coralline formation. The Antilles, Greater and Lesser, are volcanic, and form the peaks of a mountain chain continuous with the N. E. range of Venezuela, and rising in Cuba, Hayti, and Jamaica into summits from 6,000 to 7,000 feet high, and in many of the Lesser Antilles to the height of 4,000 to 5,000 feet. In St. Vincent and Guadeloupe there are active volcanoes, and Hayti and Jamaica are subject to earthquakes. The Bahamas, being low, are sultry and intensely hot, though for a part of the day the sea breezes temper the heat. The more mountainous islands have a delightful and temperate climate, especially in the highlands. The islands abound in minerals. The copper mines of Cuba are among the most extensive on the globe. Gold, silver, alum, copperas, and excellent coal are found on the same island; gold, silver, copper, tin, iron, and rock salt in Hayti; lead, copper, and salt in Jamaica; gold, copper, iron, lead, and coal in Porto Rico; asphaltum and coal oil in Trinidad; and salt in the Bahamas. The characteristic feature of the botany of the West Indies is the great predominance of ferns and orchidaceous plants. The forests furnish mahogany, lignum vitæ, granadilla, rosewood, and other woods of great value for ornamental and useful purposes. The fruits are mostly tropical in their character, and many of them of excellent quality. The pineapple, cocoanut, pomegranate, mango, guava, orange, lemon, lime, breadfruit, and banana, many of them of numerous varieties, abound. Of spices, drugs, and dye stuffs, indigo, ginger, pepper, arnotto, aloes, sassafras, cochineal, logwood, &c., are the principal. Maize is largely cultivated in most of the islands, while tobacco, coffee, and sugar are staples in several, and cotton is considerably cultivated. Of the wild animals existing at the discovery of the archipelago, the agouti, peccary, raccoon, native Indian dog, and wild boar, the last only remains. Monkeys are also found on several of the islands. Birds are numerous, and many of them of beautiful plumage. Reptiles also abound, including turtles of large size and delicacy, lizards, and snakes. The fish are of excellent quality and very abundant. The insect tribes form the greatest pest of the islands.—When Columbus discovered the West Indies, the southern islands were peopled by the Caribs, a fierce and warlike tribe, and the northern were in possession of the Arrowauks, a much milder and gentler race. Both are now nearly extinct, a few families of Caribs only remaining in St. Vincent and Trinidad. The present population consists of whites, negroes, and mulattoes; the first named are somewhat less than $\frac{1}{3}$ of the whole population. Slavery once existed in all the islands, but is now abolished except in those of Spain. Spanish, French, and English are the languages spoken on the islands, though in some of them, Hayti for instance, the spoken language of the colored races is a *patois* difficult to understand, and combining considerable proportions of the African tongues with French and Spanish. In the Spanish, French, and Venezuelan islands, and Hayti, the Roman Catholic religion prevails; and in the British islands Anglican Protestantism is established. In Trinidad there exists a Mohammedan negro community, the only one on this side of the Atlantic.

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* The Spanish explorers appropriately gave the name of Leeward islands to those along the coast of Venezuela; but some of the English geographers, regardless of this fact, divided the Lesser Antilles into two groups, the dividing line being the passage between Martinique and Dominica, and the islands lying N. and N. W. of Martinique as far as Porto Rico were called Leeward isles. This use of the term is confined to English geographers, and is incorrect when the whole archipelago is spoken of.

WEST POINT, the site of the U. S. military academy, and an important fortress during the revolutionary war, situated in the township of Cornwall, Orange co., N. Y., on the right bank of the Hudson, 52 m. from New York city. West Point, properly so called, is an elevated plain from 160 to 188 feet above the level of the river, being highest at the N. E., widest on the N., narrowing toward the S., and flanked on the W. by rocky elevations rising from 500 to 1,500 feet in height. The nearest and most prominent of these is Mount Independence, 1 m. S. W., on the crest of which, in the revolution, stood Fort Putnam, surrounded on 3 sides by deep ravines commanding the river and protecting the other defences, and elevated 598 feet above the river. The passage of the Hudson through the highlands at this point is pronounced by travellers the finest river pass known. The military academy buildings and grounds are on the plain mentioned above, which is about a mile in circuit, and contains nearly 160 acres. During the revolutionary war this was regarded as one of the most important military positions in the northern states. A fort was in existence on Constitution island, opposite the point, as early as July, 1776, and temporary works were erected, and a chain stretched across the river, opposite Fort Montgomery, 6 m. below, by direction of Gen. James Clinton, in the autumn of 1776. This chain was taken by the British, and Fort Constitution fell into their hands and was destroyed, in Oct. 1777. After the capture of Burgoyne they abandoned this vicinity and sailed down the river. In the winter of 1777-'8 a commencement was made in fortifying West Point and its vicinity; a larger chain was stretched across the river in the spring of 1778, a *chevaux de frise* was sunk, a fort was erected on the N. E. angle of the plain, called Fort Clinton, and another was begun on Mount Independence, and named after Gen. Putnam, who was in command there till March, 1778. These works were subsequently greatly strengthened and partially finished under the superintendence of Kosciuszko, and a part of the treason of Arnold consisted in obtaining command of the fortress by false representations, with the intention of surrendering it to the British, a scheme happily foiled by André's arrest. The point itself was purchased of Stephen Moore by the United States in Sept. 1790, and a tract adjoining in 1824, and the state of New York ceded its jurisdiction over it in 1826. After the war its importance as a military post was repeatedly pressed upon congress; but though $35,000 was appropriated for the repair and completion of the forts, and expended in 1794 under the direction of Major Niven, yet the refusal of congress to make a further grant of $45,000 to finish the works caused them to be left in such a condition that they have since fallen into ruin. The military academy was first suggested by Col. Pickering in April, 1783, and was repeatedly commended to congress by Washington during his administration; but though some acts were passed providing for attaching 8 cadets to each battalion of artillerists and engineers in 1794, and in 1798 providing teachers for their instruction, yet there was no provision made for a military academy till March 16, 1802. By the act of that date the instruction was confined to the cadet artillerists and engineers, and the number of the former fixed at 40 and of the latter at 10. The act provided that the senior engineer officer present should be superintendent of the academy, and required the residence there, beside the senior officer, of two captains and two lieutenants of engineers. In 1803 a teacher of French and another of drawing were authorized. In 1808 the superintendent, Col. Williams, recommended the appointment of an academical staff, consisting of the superintendent, who had the power of appointing a superintendent *pro tem.* in his absence, professors of natural philosophy, mathematics, engineering, architecture, chemistry, and mineralogy, and teachers in drawing, French, German, riding, fencing, and sword exercise. This recommendation was not acted upon at that time by congress; and though 156 additional cadets were appointed, they were not attached to the military academy, and only 52 were appointed from 1808 to 1812. In 1812 a part of Col. Williams's recommendations were carried into effect, most of the professorships authorized, and the number of cadets fixed at a maximum of 250. In 1816 provision was made for the appointment of an annual board of 5 visitors, to attend each general examination, and report thereon to the secretary of war; and a course of studies was drawn up the same year, assigning to the first year English grammar and composition, French, logarithms, algebra, and plane geometry; to the 2d, French, higher geometry, algebra, conic sections, and drawing; to the 3d, natural and experimental philosophy and chemistry, astronomy, engineering, and drawing; to the 4th, geography, history, ethics, and a review of English grammar, of the Latin and Greek languages, and of all the preceding studies. Military studies were also prescribed, and one fourth of each year was to be spent in camp. The allowance to each cadet, including rations, was $28 per month. From time to time professors of chemistry, geology, &c., were added; the chaplain had been from the first professor of ethics; the course of study was raised, more being required in the way of preparation; and a more extended instruction in drawing and engineering, fortification, tactics, the construction of roads and bridges, rhetoric, moral philosophy, and political science, including constitutional and international law, added. In 1858 the course of study was extended to five years, but subsequently again reduced to four. The officers of the academy are now (1862) a superintendent and commandant of the post, with the rank of colonel of engineers; a professor of military and civil engineering, with 2 acting assistants; a professor of natural and experimental philosophy, with one assistant and 2 acting assistants; a professor of mathematics, with one assistant and 4 acting assistants; one commandant of cadets and instructor of artillery, cavalry, and infantry tactics, with the rank of lieutenant-colonel of engineers, with 5 assistants; a professor of drawing, with 2 assistants; a professor of French, and 2 assistants; a chaplain and professor of geography, history, and ethics, with one assistant and 3 acting assistants; a professor of chemistry, mineralogy, and geology, with one assistant; a professor of Spanish, with one assistant and an acting assistant; an instructor in ordnance and gunnery; an instructor of practical military engineering, with one assistant; and an instructor in the use of small arms, with one assistant; in all, 41 professors and teachers. The course of instruction is as follows: 1st year, mathematics, English studies, fencing, bayonet exercise, and practical instruction in the school of the soldier, company and battalion, and artillery; 2d year, mathematics, French, fencing, and tactics of infantry, artillery, and cavalry; 3d year, natural philosophy, chemistry, drawing, riding, and tactics of infantry, artillery, and cavalry; 4th year, military and civil engineering, mineralogy and geology, chemistry, law and literature, practical military engineering, tactics of infantry, cavalry, and artillery, ordnance, and gunnery. The instruction is free, but the cadet, unless sooner released by the government, is required to serve for 8 years after completing his course. The cadet must not be under 16 or over 21 on entering. One cadet is appointed from each congressional district, and 10 annually at large. The former are appointed on the nomination of the members of congress from their respective districts, and the latter by the president.

WESTALL, Richard, an English painter, born in Hertford in 1765, died Dec. 4, 1836. He served an apprenticeship to an engraver of heraldic emblems, but upon coming of age took up painting and designing as a profession, and executed a number of exquisite water-color drawings on subjects taken chiefly from classical mythology. In this department of the art he was without a rival. Subsequently he furnished designs for Boydell's "Shakespeare Gallery," and for an indefinite number of annuals and illustrated books. The latter description of work finally occupied his time exclusively, and his style became mannered and insipid. In the latter part of his life he encountered heavy pecuniary losses in consequence of unsuccessful speculations in picture dealing. He was in 1794 elected a royal academician. —William, brother of the preceding, born in Hertford, Oct. 12, 1781, died Jan. 22, 1850. He acquired his early instruction in the school of the royal academy, and in 1801 took part in a voyage of discovery under Capt. Flinders, in the course of which he visited Australia, China, and India, making in each of those countries numerous sketches of striking scenery and objects, a number of which, executed in water colors, were exhibited in London in 1808. He also painted some elaborate views of the coasts and interior of Australia, which attracted attention. Subsequently he occupied himself almost exclusively with making drawings for engraving. Among his best productions are a series of engraved designs of the lake region of England, of the monastic ruins of Yorkshire, the Isle of Wight, &c.

WESTCHESTER, a S. E. co. of New York, bordering on Connecticut and Long Island sound, bounded W. by the Hudson and S. W. by the Harlem river, separating it from New York city, and drained by the Croton and Bronx rivers; area, 525 sq. m.; pop. in 1860, 99,457. Several ridges of hills extend N. and S. through the county, the valleys between which are generally fertile. The productions in 1855 were 35,148 bushels of wheat, 402,238 of Indian corn, 204,759 of oats, 51,404 of rye, 286,249 of potatoes, 1,116,589 lbs. of butter, and 90,496 tons of hay. There were 29 grist mills, 31 saw mills, 5 furnaces, 4 iron founderies, 1 cotton and 3 woollen factories, 5 carpet factories, 148 churches, 10 newspaper offices, and 30,301 pupils attending public schools. Stock growing, gardening, and fruit raising are among the chief occupations. The county has numerous villages and towns, and furnishes homes for thousands of people employed in New York city. Extensive quarries of marble are found near Sing Sing, and there are several mineral springs. The county is traversed by the Hudson river, the Harlem, and the New York and New Haven railroads. Capitals, White Plains and Bedford.

WESTCHESTER, Penn. See West Chester.

WESTERGAARD, Niels Ludvig, a Danish orientalist, born in Copenhagen, Oct. 27, 1815, was graduated at the university there, and in 1838 went to Bonn to study Sanscrit. Thence he went to Paris, London, and Oxford, and afterward made a journey to India, returning in 1844 by way of Tiflis, Moscow, and St. Petersburg. He was appointed professor of oriental languages at the university of Copenhagen, which office he still holds. He has published *Radices Sanscritæ* (Bonn, 1841), a critical edition of the *Zend Avesta*, and other works, including dissertations on the cuneiform inscriptions.

WESTERN AUSTRALIA, a British colony of the Australian continent, originally called the Swan River Settlement, the boundaries of which are not yet settled. It may however be described as lying between lat. 30° and 35° 8′ S., and long. 115° and 119° E., being about 350 m. long and 250 broad, with an area of 65,000 sq. m.; pop. in 1859, 14,837. The colony is divided into 32 counties. Beside Perth, the capital, there are several smaller towns, the chief of which are Freemantle, Augusta, Bunbury, Rockingham, and Vasse. The principal bays and harbors are Jarien bay, Sage road at the mouth of the Swan river, Geographe bay upon the W. coast, and Flinders inlet and King George's sound, on the S. side of Australia, near Cape Leeuwin. The chief river is the Swan, which flows into the estuary called Melville water, the entrance of which is much obstructed by rocks and shoals. The other streams are all small, the largest being only navigable for a few miles. The Darling mountains extend in a N. direction from the S. coast for nearly the whole length of the colony, at a distance varying from 50 to 150 m. from the shore, and with an elevation ranging from 800 to 3,000 feet; they are supposed to be continued to the N. along the whole coast. At the S. limit of the colony there are 3 mountain ranges which run for some distance nearly parallel, and terminate near King George's sound in lat. 35° 6′, Cape Chatham, lat. 35°, and Cape Leeuwin, lat. 34° 20′ S. The easternmost of these ranges attains the greatest elevation, the highest point being 5,000 feet above the level of the sea. On the lower slopes of these mountains there are extensive forests of mahogany and blue gum trees. The soil in other localities is generally light and sandy, except where the rivers have brought down an alluvial deposit from the mountains. Basalt, sandstone, limestone, roofing slate, marl, and selenite are found in different parts of the colony; and a coal field has been traced from Geographe bay to Shark's bay, a distance of 600 m. Magnetic iron ore, lead, and copper exist in large quantities. The climate is remarkably dry and healthy. Showers occur between March and November, but the heaviest rains fall during the months of August and September. Seed time lasts from the beginning of May till the end of August, and harvest begins in December, when the weather is clear and dry, and heavy dews fall at night. The average temperature of winter is about 58° and of summer 76°. The productions consist of different kinds of grain, and all the vegetables of the temperate regions, together with many of those of the tropics; but the yield per acre is not nearly so large as in the colonies on the S. E. of Australia.—The aborigines within the colony do not probably exceed 1,500, but as they lead a wandering life their number is not returned in the census. The other inhabitants are composed of free emigrants and convicts sent out from Great Britain. In 1859, of the white population 9,522 were males and 5,315 females, and there were 4,415 single men to 801 single women; but of those under 15, 2,410 were males and 2,444 females. In the same year the value of the imports was £125,315, and that of the exports £93,037. In 1854, during the 4 years that crown prisoners had then been in the colony, they had by their labor erected a large prison at Freemantle, and smaller ones and commissariat stores and offices at 7 other places. They had made 272 miles of roads; built 28 bridges, one of which, over the Swan, was 480 feet long and 30 feet high; and erected several jetties and landing places, one of them 216 and another 455 feet long. Schools are provided by the government for children of all denominations, as well as for the natives, those who can afford it being expected to pay a small fee; beside which there are schools maintained by the Wesleyan Methodists. The colony is ruled by a lieutenant-governor, who is nominally subordinate to the governor of New South Wales, styled the governor-general of Australia.—The first settlement at Swan river was made in 1829, but the colony continued to languish until 1849, when, at the request of the settlers, convict labor was introduced.

WESTERN EMPIRE, the name given to the western division of the two parts into which the Roman empire was divided on the death of Theodosius the Great, A. D. 395. By the will of that emperor the eastern portion, now known as the Byzantine empire, was given to his elder son Arcadius, whose capital was established at Constantinople. (See BYZANTINE EMPIRE.) The western portion, with Rome as its capital, was bequeathed to his younger son Honorius, then in the 11th year of his age. His dominion extended over Italy, Africa, Gaul, Spain, and Britain, and over Noricum, Pannonia, and Dalmatia in the prefecture of Illyricum; yet it was intended by Theodosius that the two vast empires should be ruled in common by the two brothers. The guardian of Honorius was Stilicho, the master-general of the forces. (See STILICHO.) The Goths, under the lead of Alaric, in 395 invaded the rich provinces of Thrace and Macedonia, and ravaged almost all the districts of Greece; and in 396 Stilicho marched at the head of the forces of the western empire to the Peloponnesus with the design of destroying the barbarian army. But the able general of the Goths made his way through the lines by which he was surrounded, and soon after was made master-general of eastern Illyricum by the Byzantine court, who, jealous of the presence of Stilicho, ordered him to retire from the dominions of Arcadius. That general obeyed, and turned his attention to regulating the internal affairs of the western empire and to suppressing the rebellion of Gildo in Africa. Gildo was a Moor who had been made by Theodosius governor of Africa, in which country he gradually usurped the entire civil and military power of the government; and upon the accession of Honorius, though he paid that weak monarch a nominal allegiance, he soon transferred his homage to the court of Arcadius. The command of the expedition against the usurper was intrusted to Mascezel, Gildo's brother, and the fate of the country was decided in one campaign (398), in which the rebel chieftain, having been defeated in battle, destroyed himself. In 402 Alaric invaded Italy, but in the spring of 403 was defeated with great slaughter by Stilicho at Pollentia and Verona. The deliverance of Italy was celebrated in Rome with magnificent processions and games, in which for the last time, it is said, combats of gladiators were exhibited. The court was also removed from the defenceless city of Milan to the impregnable fortress of Ravenna, which continued until the middle of the 8th century to be the seat of the government and the capital of Italy. Scarcely, however, had the country been freed from the presence of Alaric, when it was threatened by a new and more formidable invasion. Radagaisus, at the head of a mixed horde of Goths, Vandals, Suevi, Burgundians, and Alani, crossed in 405 the Alps, the Po, and the Apennines, pillaged and destroyed many cities, and was carrying on the siege of Florence, when the army of Stilicho in its turn besieged the barbarian hosts, and finally forced them by famine to surrender. Radagaisus was put to death, and most of his surviving troops were sold as slaves; but a part of his army on their retreat invaded Gaul, and, carrying ruin and devastation in their path, advanced in less than two years to the foot of the Pyrénées. At the same time the neglected army in Britain revolted, and hastily placed upon the throne and as hastily murdered Marcus. He was succeeded by Gratian, who at the end of 4 months suffered the fate of his predecessor; and he in turn was succeeded in 407 by a private soldier named Constantine, who, not allowing his troops to remain idle in camps, immediately crossed the channel with the purpose of effecting the conquest of the western empire. Landing at Boulogne, he summoned the cities of Gaul to acknowledge his authority. He was likewise successful at first in gaining some advantages over the barbarians, but was soon forced to conclude with them a degrading and precarious truce. On the approach of Sarus, the general of Honorius, Constantine shut himself up in Vienna (now Vienne in Dauphiné), and there endured an attack of 7 days, in which the imperial army was ignominiously defeated and forced to recross the Alps. This success was soon followed by the conquest of Spain under the usurper's son Constans, the only opposition offered being by a rustic army assembled by four relatives of the late emperor Theodosius. In the mean time Alaric after his retreat from Italy had left the service of the eastern empire and gone over to that of the western, being created master-general of the whole prefecture of Illyricum. In the negotiations which were carried on, Stilicho, who knew the weakness of the empire, advised compliance with the extravagant demands of the Gothic king. The senate unwillingly consented to pay a subsidy of 4,000 pounds of gold, and Stilicho's advocacy of the measure endangered his popularity among the Roman legions, while his influence at court was secretly undermined by the minister Olympius, who filled the weak Honorius with suspicions of his general. Stilicho was finally assassinated in Aug. 408, and the western empire, which in him lost its only military leader, had now no one capable of withstanding the power of the Goths. Moreover, the wives and children of the barbarian auxiliaries, who had been kept in the principal cities of Italy as hostages, and were strongly attached to the dead general, were treacherously massacred, and by this act the government lost 30,000 of its best soldiers, who went over to Alaric. That general, after carrying on an artful negotiation with the Roman court, suddenly crossed the Alps and the Po in 408, ravaged all northern Italy, and encamped under the very walls of Rome. As all sources of supply were cut off, the inhabitants soon began to feel the horrors of famine, thousands dying of hunger in the streets. Two ambassadors were finally sent to make terms with the Gothic king. They threatened, if an honorable capitulation was not given, that he would have to meet a countless multitude armed with all the energy of despair. "The thicker the hay, the easier it is mowed," was the reply of the haughty barbarian, who at length agreed to leave Rome unmolested, provided all the gold and silver in the city, whether public or private property, and all the rich and precious movables, and all the barbarian slaves, were given up to him. To the question, what he intended to leave the inhabitants, he answered, "Their lives." Alaric, however, finally raised the siege on receiving 5,000 pounds of gold, 30,000 pounds of silver, 4,000 robes of silk, 3,000 pieces of fine scarlet cloth, and 3,000 pounds of pepper. As soon as these demands were satisfied, he fixed his winter quarters in Etruria, where he began to carry on negotiations with the Roman court, which acted with its usual treachery and weakness. At last Alaric, indignant at repeated insults, marched again toward Rome, but, instead of attacking it directly, captured Ostia, in which was stored the grain for feeding the capital. Rome now surrendered, and received from its conqueror a new emperor, Attalus, the prefect of the city. He made the Gothic leader master-general of the western empire, and almost all Italy soon submitted to the new monarch, whom Alaric led to the very gates of Ravenna. There he was met by an embassy from the Roman court, who proposed to divide between Attalus and Honorius the sovereignty of the West; but this was disdainfully refused by the king of the Goths, who promised that if Honorius would instantly give up his authority, he should be permitted to pass the remainder of his life in peace in some distant island. To such an extent had the power of the emperor fallen, that his cause was betrayed by Jovius, his minister and prætorian prefect, and Valens, his master of the cavalry and infantry; and he was on the point of flying to the protection of his nephew, the emperor of the East, when 4,000 veterans unexpectedly landed at Ravenna. Moreover, a small body of troops sent by Attalus for the conquest of Africa were totally defeated by Count Heraclian, and this introduced divisions and distractions into the party of the new emperor, until at last Alaric publicly deprived Attalus of the insignia of a sovereignty he had never really enjoyed. The Gothic king now opened negotiations once more with the court of Ravenna; but with returning fortune the insolence of the imbecile government returned. A herald publicly announced that the guilt of Alaric had for ever shut him out from the friendship and alliance of Honorius, and Alaric for the third time began his march to Rome. The city was taken by treachery the night of Aug. 24, 410, and given up to the fury of his warriors, who pillaged private houses, burned a large number of the dwellings, and carried off many works of art; but by a special decree of Alaric the churches and the treasures contained in them were left untouched. After 6 days of spoliation the Goths took up their line of march along the Appian way to southern Italy, plundering the country and capturing the cities as they went. They had reached the extreme land and were on the point of crossing the narrow straits of Messina into Sicily, when the sudden death of their leader put an end to the design. Alaric was succeeded by his brother-in-law Ataulphus, who formed with the court a treaty of alliance, and in the capacity of a Roman general marched in 412 to southern Gaul, and soon gained possession of that country from the Mediterranean to the ocean. Before leaving Italy he had been united in marriage to Placidia, the daughter of Theodosius the Great. In 409 Constantine, who had usurped the dominion of Gaul and Spain, had made a treaty with Honorius in which he agreed to drive the Goths from Italy; and for that purpose he marched at the head of a strong army as far as the Po, but hastily returned to Arles. His general Gerontius, who commanded in Spain, rebelled in turn, and bestowed the purple upon Maximus, who established his residence at Tarragona. Rapidly crossing the Pyrénées, Gerontius surprised Constans, the son of Constantine, at Vienna, and put him to death, and immediately began the siege of Arles, where the usurping emperor had shut himself up. The place was about to be surrendered, when the approach of the army of Honorius under command of Constantius scattered the forces of Gerontius, who fled to the borders of Spain, where he was treacherously killed. The life of the insignificant Maximus was spared, but he is said to have rebelled again in 419, and to have been seized and put to death in 422. Constantius, however, renewed the siege of Arles, defeated an army of barbarians sent to relieve the place, and having captured the city sent the usurper to Italy, where he was put to death by Honorius. In the fourth month of the siege of Arles Jovinus assumed the title of emperor, and with a large body of barbarians marched to the Rhône, and Constantius, retreating before him, gave up Gaul without dispute. When Ataulphus at the head of the Visigoths marched from Italy into that country, he at first formed an alliance with the usurper, but afterward defeated, captured, and put to death Jovinus and his brother Sebastian, who had been adorned with the imperial purple. In 414 the Gothic leader marched into Spain, but was assassinated at Barcelona. Wallia, who soon after became king of the Goths, ravaged all Spain, and was at first unfriendly to the western empire; but on the approach of a Roman army under Constantius, he entered into the service of the empire, and exterminated or defeated the Silingi, the Alani, the Vandals, and the Suevi, who had ravaged that country. In 418 the Goths returned to Gaul, and received from Honorius the southwestern part of that province, with Toulouse as its capital, which they held in a kind of feudal dependence upon the empire. During the last years of Honorius also the Burgundians and Franks occupied permanent seats in Gaul, and the inhabitants of Britain asserted their independence of a power that was too weak to afford them protection. Placidia, the widow of Ataulphus, had been given in marriage in 417 to the Roman general Constantius, and in 421 her husband was elevated to a share in the empire. He died 6 months after his accession; but the intimacy of Placidia with her half brother Honorius, which gave rise at first to scandalous reports, changed into enmity, and from Ravenna she fled in 423 to the court of Theodosius II., emperor of the East. In the same year Honorius died, having reigned 28 years and 8 months. The throne was usurped by his principal secretary or *primicerius* Joannes, who formed an alliance with the Huns, and prepared to resist the forces of the eastern empire, which, under the command of Ardaburius and his son Aspar, were marching to Italy to place upon the throne of the West Valentinian, the son of Placidia. In 425 Ravenna was taken possession of by treachery, the usurper put to death, and Valentinian III., a boy of 6 years old, received the imperial purple, yielding to the eastern empire for its support all western Illyricum. A decree was also issued by which all laws were limited to the dominion of the sovereign in which they were promulgated, and thus the unity of the Roman empire was as effectually dissolved in name as before it had been in fact. Aëtius, the general of Joannes, had marched to the border of Italy with an army of 60,000 Huns, but the death of the usurper obliged him to form an alliance with the Roman government, of which Placidia, who acted as guardian of her son, was the real sovereign. Raised to the dignity of *comes*, Aëtius led Placidia to suspect the fidelity of Count Boniface, who was commanding in Africa, and to order his recall, while at the same time he warned Boniface to resist, as his death had been determined upon. By this double treachery the African general was persuaded to revolt, and in 427 he called in to his aid the Vandals under Gonderic. During the absence of Aëtius, the fraud of that general was discovered; but Boniface repented too late of having invoked the assistance of the barbarians, who under Genseric, the successor of Gonderic, crossed over from Spain into Africa. Defeated in battle, the Roman commander took refuge in Hippo, where he endured a siege of 14 months, when, being reënforced by an army under Aspar, he ventured a second battle, in which he was totally defeated. Africa was now abandoned to its fate, but Carthage was not taken until 8 years afterward (439). Boniface returned to Italy in 432, and was made master-general of the forces; whereupon Aëtius, who had been for several years fighting with great success against the Franks and Germans, returned to Italy also, and the two generals decided their quarrel by a battle. Boniface was victorious, but received a mortal wound; the defeated Aëtius fled to the Huns, with whose aid he soon procured his reinstatement. In 435 peace was made with Genseric, by which the western empire still maintained an undisturbed control over Mauritania. A war however broke out in southern Gaul, where the Goths under their king, Theodoric, the son of Alaric, began in 436 the siege of Narbonne, which was relieved by some Hunnish auxiliaries under Count Litorius, who in turn besieged Theodoric in Toulouse, but in 439 was defeated and made prisoner by the Gothic king. The latter, however, made peace with the Romans, who under Aëtius had been successful in maintaining the sovereignty of the empire in eastern Gaul. The extreme cities and provinces began gradually to drop off from the western empire; Sicily was ravaged by Genseric in 440; in 446 Britain was entirely abandoned by the Roman forces; and in 451 Attila, king of the Huns, marched into Gaul, and began the siege of Orleans. The city was almost on the point of surrendering, when the Roman and Gothic army under Aëtius and Theodoric advanced to its rescue. Attila crossed the Seine and awaited the enemy in the plains of Châlons, where he suffered a total defeat, but the year following renewed his pretensions, and at the head of a large army passed into Italy. After ravaging the northern portion, the payment of a vast sum of money induced him to return to his wooden palace in Pannonia, where his sudden death in 453 relieved the empire from the terror of another invasion. In 454 Aëtius was murdered by the hand of his master, who, having subsequently dishonored the wife of Petronius Maximus of the Anician family, was assassinated in turn by two barbarians who had been hired for that purpose by the injured senator. The murder took place on March 16, 455, after Valentinian had reigned 20 years. Until 450 the government had been in the hands of his mother Placidia, who zealously labored for the interests of the church, deprived heathens and Jews of all chance of obtaining military rank or of practising the law, and restored to the ecclesiastics the privileges from which they had been excluded by the usurper Joannes. Valentinian was succeeded as emperor by Petronius Maximus, the unanimous choice of the senate and the people. The new emperor forced Eudoxia, the widow of Valentinian, to become his bride, though acknowledging to her his agency in the murder of Valentinian; and she, actuated by a blind desire of revenge, secretly implored the aid of Genseric, king of the Vandals, whose fleets had already ravaged the coasts of Italy. At the head of an army Genseric disembarked at the mouth of the Tiber. Maximus in an attempt to flee was slain in a tumult at Rome, after a reign of 3 months. Three days afterward the Vandals marched upon the city, and for 14 days and nights the pillage went on. All the wealth and treasure that were left by the Goths, together with a large number of captives, including the empress and her two daughters, were carried off. Maximus during his short reign had appointed Avitus, an illustrious Roman, to the master-generalship of the cavalry and infantry of Gaul; and he while holding this office visited the court of Theodoric, king of the Visigoths, at Toulouse. While there he heard of the death of Maximus, and soon afterward the annual assembly of the 7 provinces of Gaul at Arles offered him the imperial throne. At the request of the senate and the people he took up his residence in Rome, and by his conduct soon aroused the contempt and hatred of his subjects, jealous likewise of the Gothic influences which had placed him upon the throne. These feelings were taken advantage of by Count Ricimer, one of the leaders of the barbarian troops engaged in defence of Italy, who, after returning victorious from an expedition against the Vandals, informed Avitus that it was time for him to abdicate. His life was granted him by his conqueror, but not by the senate, and he fled to Auvergne, where he soon afterward died. A vacancy of some months followed, in which Ricimer was the real governor of the empire, but did not assume the imperial title. In 457 he consented to the accession of Majorian, the ablest and best of the later Roman emperors. Majorian immediately set about the establishment of laws for the relief of the country. He granted amnesty from all arrears of tribute and public debt, restored the jurisdiction of the provincial magistrates whose functions had been superseded in great measure by extraordinary commissions, compelled the municipal corporations to resume their duty of levying the tribute, revived the office of defenders of cities to protect the lower classes against the higher, and checked by severe laws the destruction of the public buildings in Rome. Nor was he less able and successful in his foreign policy. In 458 a body of Vandals, having landed at the mouth of the Liris, were attacked and defeated with great slaughter. But Majorian, who saw that it was impossible to defend the long line of the Italian coast, determined to restore Africa to the empire. Vast numbers of barbarians, attracted by his fame, flocked to his standard from all quarters, and by the power of his arms he reduced Gaul to obedience, defeating the Visigoths under Theodoric, whom he admitted to an alliance. Spain, which during the reign of Avitus had been overrun by the Goths, submitted to his authority. In the harbor of Carthagena he collected in 460 a fleet of 300 galleys with transports and smaller vessels, with which he designed to undertake the conquest of Africa. In vain Genseric implored for peace, and the restoration of Africa to the western empire seemed certain, when the treachery of some of Majorian's subjects enabled the Vandal monarch to surprise the unguarded Roman fleet in the bay of Carthagena, and destroy in one day the labor of three years. But Genseric after his success immediately applied for peace, and the Roman emperor, who in spite of his disappointment had by no means given up his design, consented to a treaty. His glory had been lessened by the misfortune at Carthagena, and Count Ricimer, who found that he had raised a master instead of a servant to the throne, persuaded the inconstant soldiers to engage in a sedition through which Majorian was obliged to abdicate on Aug. 2, 461, while at his camp near Tortona. Five days afterward he died or was put to death, and the Roman senate immediately obeyed the demand of Ricimer and conferred the imperial title upon Libius Severus. Of the events of his reign, which lasted until Aug. 465, history has scarcely preserved any record. The administration of the government was entirely in the hands of Count Ricimer, who after the death of Severus made no effort to have any successor placed upon the throne, but negotiated alliances, amassed treasures, and formed a separate army, as if he were emperor. His authority, however, did not extend beyond Italy. Marcellinus, an old follower of Aëtius, took possession of the province of Dalmatia, and, under the title of patrician of the West, ruled that country and built a fleet, with which he made himself sovereign of the Adriatic. In Gaul Ægidius, the master-general of that province, maintained an independent rule, which was undisturbed until his death. Meanwhile the Vandals continued their depredations on the Italian coasts, rarely attacking fortified places, but landing at unexpected points and retiring loaded with plunder gained by ravaging the country. In one of their expeditions they subdued the island of Sardinia. Ricimer was at last worn out by empty struggles to protect the country, on which by the deposition of Majorian he had brought the greatest calamities, and humbly solicited the aid of Leo, emperor of the East. That monarch determined to destroy the Vandal power, and placed upon the throne of the West Anthemius, one of his most distinguished subjects, who was inaugurated in Rome in 467. The daughter of Anthemius was married to Ricimer, and all the powers of the West and the East were assembled to destroy the Vandal authority. The prefect Heraclius, at the head of the troops of Egypt, Thebaïs, and Libya, landed on the coast of Africa Syrtica (Tripoli), subdued that province, and began his march toward Carthage, whither the main army was to proceed. Marcellinus was induced to recognize Anthemius as emperor, and that able general soon cleared the island of Sardinia of the Vandals. A fleet of 1,113 ships, carrying over 100,000 men, sailed from Constantinople to Carthage, and the entire armament was put under the command of Basiliscus, the half brother of Leo. Landing his troops at Cape Bona, he was either joined or aided by the army under Heraclius and the fleet under Marcellinus, and began his march toward Carthage. Nothing could resist his progress; but the wily Genseric, by pretending abject submission, persuaded the Roman general to consent to a truce of 5 days. Taking advantage of this favorable opportunity, he attacked by night the unguarded fleet of his enemies, burned many of the vessels, and killed or captured a large number of the soldiers. Basiliscus fled to Constantinople, Heraclius retreated to Egypt, and Marcellinus to Sicily, where he was assassinated. Thus freed from the fear of any foreign invasion, Genseric again began his depredations on the coasts of the Mediterranean, reclaimed Syrtica and Sardinia, and added Sicily to his dominions. In the meanwhile Theodoric II., king of the Visigoths, had after the death of Majorian seized upon the territory of Narbonne, and also attempted to gain possession of the provinces held by Ægidius, but was defeated by the activity and ability of that general. After his death, however, Euric, the brother, murderer, and successor of Theodoric, resumed the design of bringing Spain and Gaul under the Gothic rule, and nearly succeeded. The whole of the former country was reduced into actual or nominal allegiance, and the latter from the Pyrénées to the Rhine and the Loire, with the exception of Berry and Auvergne. The feeble government of Anthemius was unable to afford its transalpine subjects any assistance, and its power was still further reduced by the jealousies which broke out between the emperor and Ricimer. The latter retired to Milan, and Italy was divided into two independent and hostile sovereignties. A temporary reconciliation was effected between the monarch and his powerful subject, but as soon as Ricimer had completed his arrangements, he marched in 472 at the head of an army largely reënforced by barbarians to Rome, and encamping on the banks of the Arno proclaimed Olybrius, a senator of the Anician family, emperor. The siege of Rome lasted 3 months, but it was taken on July 11 and given up to pillage. Anthemius was killed by order of Ricimer, who died himself 40 days afterward, leaving the command of his army to his nephew Gundobald, prince of the Burgundians. The death of Olybrius followed on Oct. 23. Gundobald now persuaded Glycerius, an obscure soldier, to accept the phantom sovereignty, and he was accordingly elevated to the throne in March, 473, at Ravenna. His title was not however acknowledged by the emperor of the East, who conferred the imperial dignity upon Julius Nepos, the nephew of Marcellinus and governor of Dalmatia. He immediately marched against Glycerius, who, unsupported by the Burgundian prince, engaged in ambitious projects beyond the Alps, was taken prisoner at the mouth of the Tiber, and resigned his claims to the throne in exchange for the bishopric of Salona. Scarcely any thing is known of the reign of the new emperor, which lasted about 14 months, except that the territory of Auvergne was ceded to the Visigoths. In 475 the general of the barbarian confederates, Orestes, raised the standard of revolt, and marched from Ravenna to Rome, whence Nepos hastily fled to his Dalmatian province, where he lived five years, and was finally murdered by Glycerius, whom he had succeeded on the throne. Orestes refused to accept the title of emperor, but consented that his son Romulus Augustus, whose name the Latins contemptuously changed into the diminutive Augustulus, should be invested with the purple. This emperor, who united in his name the appellations of the founder of the city and of the founder of the empire, did not long enjoy his elevation. Orestes, in whom the real sovereignty lay, refused the insolent demand of his barbarian allies that a third part of the lands of Italy should be divided among them; whereupon Odoacer, their leader, in 476 revolted, stormed Pavia, in which Orestes had taken refuge, and deposed Augustulus. The barbarian general determined to destroy the name as well as the power of the emperor of the West, and at his wish the Roman senate sent to the emperor Zeno an epistle in which they "disclaim the necessity, or even the wish, of continuing any longer the imperial succession in Italy; since, in their opinion, the majesty of a sole monarch is sufficient to pervade and protect, at the same time, both the East and the West. In their own name and the name of the people, they consent that the seat of universal empire shall be transferred from Rome to Constantinople." They also requested that the emperor would invest Odoacer with the title of patrician, and charge him with the civil and military administration of the diocese of Italy. Thus fell the western empire, after existing separately from the eastern 81 years, and during that time having been ruled over by 12 emperors, beside a large number of usurpers in the provinces.

WESTERN ISLANDS. See Hebrides.

WESTERWALD, a mountain range of Germany, traversing portions of Rhenish Prussia, the district of Arnsberg in Westphalia, and the northern part of the grand duchy of Nassau. The range lies between the Sieg and the Lahn, though nearer the former, commencing with the Sauerland, a plateau of S. Westphalia about 1,600 feet above the sea level, between the sources of the Sieg and Lahn, near the little village of Erndebrück, forming two curves like a horizontal S, and terminating on the Rhine nearly opposite Coblentz. The range is nearly 70 m. in length, and about 2,000 feet above the level of the sea; its highest summit, the Salzburger Kopf, attains an elevation of 2,172 feet. A bleak plateau, called the Kalte Eich, extends from the Westerwald S. E., intersected by the narrow valley of the Lahn, to the Taunus range, which forms the watershed between the Lahn and Main. The mean height of this plateau is not over 1,600 feet; but the Taunus range itself is about 2,000 feet, and its principal summit, the Feldberg, rises to the height of 2,850 feet. The waters of these ranges all belong to the basin of the Rhine.

WESTMACOTT, Sir Richard, an English sculptor, born in London in 1775, died there, Sept. 1, 1856. He obtained his first instruction in art from his father, who was a sculptor. He was sent in 1793 to Rome, where he received the advice and instruction of Canova, and gained prizes offered by the grand duke of Tuscany and the pope. In 1795 he was elected a member of the academy of Florence. Returning to England in 1797, he followed his art in London for more than half a century with reputation and profit. His works, comprising alto-rilievos, bass-reliefs, and bronze and marble statues and groups, may be divided into classical or imaginative pieces, portrait busts and statues, and monumental sculptures, in all of which he showed merit. He also excelled in representations of children. Among the more poetical and inventive of his productions are the "Psyche" and "Cupid" executed for the duke of Bedford, the "Houseless Wanderer" at Bowood, the "Nymph and Cupid" in the Grosvenor collection, and the large rilievo of the "Dream of Horace," which evince a feeling for the antique and considerable executive skill. Among his statues of public men, the works by which he is now best known, may be mentioned those of Pitt, Fox, Spencer Perceval, and Addison; the colossal equestrian bronze statue of George III. at Windsor; and the monumental groups and statues of Abercromby, Collingwood, Pakenham, Erskine, and of the duke of York on the column in Waterloo place, London. In 1816 he became a royal academician; in 1827 he succeeded Flaxman as professor of sculpture at the academy, which office he held until his death; and in 1837 he was knighted by the queen.—Richard, a sculptor, son of the preceding, born in London in 1799. He received his first instruction from his father, studied in Italy from 1820 to 1826, and since 1827 has practised his art in England with success. He has executed many rilievos and statues on subjects taken from classical mythology in the style of his father, but excels in devotional and monumental works. Among the latter class may be mentioned his recumbent figure of the archbishop of Canterbury in Canterbury cathedral; the "Angel Watching," a figure on the Ashburton monument; and "David as the Slayer of Goliah." He has also executed busts of Sir Francis Burdett, Sydney Smith, Sir Roderic Murchison, and other distinguished persons. One of his most extensive works is the group of figures on the pediment of the royal exchange. He was elected a royal academician in 1849, and succeeded his father as professor of sculpture.

WESTMEATH, a central county of Ireland, in the province of Leinster, bounded N. by the county of Cavan, N. E. and E. by Meath, S. by King's co., W. by Roscommon, and N. W. by Longford; area, 708 sq. m.; pop. in 1861, 90,856. The surface is hilly in the N., but elsewhere gently undulating. The principal rivers are the Shannon and the Boyne. The soil is light and barren in the W., while a heavier and more fertile loam predominates in the E. The greater part of the county is devoted to grazing, its horned cattle being the best in Ireland. Westmeath sends 3 members to parliament, two for the county and one for Athlone. Capital, Mullingar.

WESTMINSTER ABBEY. See London, vol. x. p. 630.

WESTMINSTER ASSEMBLY OF DIVINES, a convocation of clergymen and laymen, who assembled at Westminster, England, by direction of parliament, July 1, 1643, and remained in session till Feb. 22, 1649. The attempt of Charles I. to force upon the Scottish church the liturgy of the church of England, and the dissatisfaction which prevailed both in England and Scotland with the oppression which had been exercised against the dissenting bodies, led the parliamentary commissioners to propose to the king, in the negotiations at Oxford (Jan. 30 to April 17, 1643), that he should give his assent to "a bill for calling an assembly of learned and godly divines and others, to be consulted with by the parliament for the settling of the government and the liturgy of the church of England, and for the vindication of the doctrine of the said church from false aspersions and interpretations." This proposition, with all that accompanied it, failing in consequence of the unaccommodating disposition of both parties, it was afterward converted into "an ordinance of the lords and commons in parliament," and passed June 12, 1643. By this act, 121 clergymen, 10 lords, and 20 lay commoners were summoned by name, to meet and constitute the assembly. To these were subsequently added, to fill vacancies caused by withdrawal, sickness, or death, about 20 more. Of those thus appointed about 20 were clergymen of the church of England, and several of them afterward bishops. The king on June 22 issued a proclamation forbidding the meeting of the assembly, which prevented most of the church of England members from taking their seats. On the opening of the assembly, 69 of the clerical members were in attendance, and at different times 96 of them were present, though the usual attendance ranged between 60 and 80. The great body of the members, both clerical and lay, were Presbyterians; 10 or 12 were Independents, or as they called themselves Congregationalists; and 5 or 6 styled themselves Erastians. All, or nearly all, were Calvinists. On Sept. 15, 1643, 4 Scottish ministers and 2 lay assessors were, by a warrant from the parliament, admitted to seats and votes in the assembly, as commissioners from the church of Scotland, which on Aug. 17 had passed the "Solemn League and Covenant," binding on their part the ecclesiastical bodies of the two nations in a union, which was substantially Presbyterianism. The parliament had purposely refrained from empowering the assembly to enact or settle any thing. It was expressly provided in the "ordinance" that the assembly should not assume or exercise any jurisdiction, power, or authority ecclesicastical whatsoever, or any other power, except merely the right "to confer and treat among themselves of such matters and things, touching and concerning the liturgy, discipline, and government of the church of England, or the vindicating and clearing of the doctrine of the same," &c. The power of the Independent or Erastian party in the parliament was constantly growing during their session, and its influence was sufficient to prevent much action which would otherwise have been taken, in the way of advice and recommendation, by the assembly. The important part of the assembly's work was all performed in the first 3 or 4 years of its existence. The parliament ordered the members, Oct. 12, 1643, forthwith to "confer and treat among themselves of such discipline and government as may be most agreeable to God's holy word, &c., to be settled in this church, instead and place of the present church government by archbishops, bishops, &c., which is resolved to be taken away; and touching and concerning the directory of worship, or liturgy, hereafter to be in the church." In compliance with this order, the assembly submitted to parliament "The Directory for Public Worship," April 20, 1644, and their "Confession of Faith," the first part in the beginning of Oct. 1646, and the remainder Nov. 26 of the same year. The assembly's "Shorter Catechism" was sent to the house of commons Nov. 5, 1647, and the "Larger Catechism" Sept. 15, 1648. The other papers issued by the assembly were of no permanent importance, but consisted of admonitions to parliament and the nation, controversial tracts, letters to foreign churches, &c. The annotations on the Bible usually attributed to them, though made in part by some of the members, did not proceed from the assembly at all. In the summer of 1647 the Scottish commissioners withdrew from the assembly. In Feb. 1649, after it had held 1,163 sittings, the parliament by an ordinance changed what remained of the assembly into a committee for trying and examining ministers, and in this form it continued to hold weekly sittings till the dissolution of the long parliament, March 25, 1652. The "Directory for Public Worship" was adopted and ratified by the general assembly of the church of Scotland in Feb. 1645, the "Confession of Faith" in Aug. 1647, and the catechisms in July, 1648; and these are still the standards of that establishment. They are also recognized in substance by the Free church of Scotland, and by the other seceding Presbyterian bodies in that country. In England the "Directory for Public Worship" was ratified by both houses of parliament, Oct. 2, 1644, and the doctrinal part of the "Confession of Faith," with slight verbal alterations, in March, 1648. The presbyterian form of church government was by vote of the house of commons to be tried for a year, but was never fully established in England by legislative authority; and at the restoration, as none of these acts had received the royal sanction, it was not deemed necessary to pass any act to restore episcopacy to its former authority. The confession of faith and catechism are now the standard of the English Presbyterians, and of the Irish Presbyterian church. They have been adopted, with slight alterations, by all the Presbyterian bodies in the United States, and the "Directory for Worship," with some modifications, is in general use in these bodies. The "Shorter Catechism" was also introduced into New England, as a correct compend of doctrine, by the early ministers, and formed a part of the "New England Primer," which for almost two centuries was the book of primary instruction of the children of Puritan families. The Congregationalists, as a denomination, recognize the confession of faith and catechisms as substantially an expression of their doctrinal views.—There is not, so far as is known, any complete account of the proceedings of the Westminster assembly of divines in print, or in manuscript. The official record is said to have been destroyed in the great fire in London. Three volumes of notes by Dr. Thomas Goodwin, one of its members, are preserved in Dr. Williams's library, London; and two volumes by George Gillespie, one of the Scottish commissioners, in the advocate's library, Edinburgh. Hetherington's "History of the Westminster Assembly of Divines" (8vo., 1843) is the only full history of their action, and the causes which led to it.

WESTMORELAND. I. A S. W. co. of Penn., bounded N. W. by the Alleghany river and N. and N. E. by the Conemaugh and Kiskiminetas rivers, and drained by the Youghiogheny river and Loyalhanna, Jacob's, and Big Sewickly creeks; area, 1,040 sq. m.; pop. in 1860, 53,736. The S. E. part is mountainous, and has a poor soil; the other parts are hilly and fertile. The productions in 1850 were 668,476 bushels of wheat, 839,711 of Indian corn, 1,161,656 of oats, 1,711,854 lbs. of butter, 161,351 of wool, and 48,024 tons of hay. There were 92 grist mills, 76 saw mills, 3 iron founderies, 5 furnaces, 12 collieries, 23 salt establishments, 10 woollen factories, 8 wool-carding mills, 55 tanneries, 101 churches, and 4 newspaper offices; and in 1860 there were 14,202 pupils attending public schools. Iron ore, bituminous coal, and salt are very abundant. The Pennsylvania canal passes along the N. border, and the county is intersected by the Pennsylvania central railroad and its Blairsville branch, and the Pittsburg and Connellsville and the Alleghany valley railroads. Capital, Greenburg. II. An E. co. of Va., separated from Maryland by the Potomac, and bounded partly on the W. by the Rappahannock river, occupying a part of the peninsula called the northern neck; area, 316 sq. m.; pop. in 1860, 8,282, of whom 3,704 were slaves. It has a diversified surface, and the soil along the streams is very fertile. The productions in 1850 were 82,774 bushels of wheat, 269,115 of Indian corn, and 7,897 of oats. There were 13 churches, and 300 pupils attending public schools. The value of real estate in 1856 was $1,645,203, being an increase of 48 per cent. since 1850. This county was the birthplace of George Washington, James Monroe, and Richard Henry Lee. Capital, Westmoreland Court House.

WESTMORELAND, a N. co. of England, bounded N. and N. W. by Cumberland, N. E. by Durham, E. and S. E. by Yorkshire, S. by Lancashire, and S. W. by Lancashire and Morecambe bay; area, 758 sq. m.; pop. in 1861, 60,809. The surface, except that portion bordering on Morecambe bay, is mountainous; the Pennine chain stretches across the N. E., and curving forms the boundary between Westmoreland and Yorkshire; while the principal chain of the Cumbrian mountains extends from Helvellyn in Cumberland to Bowfell, and sends a spur through the centre of the county. There are numerous small lakes in Westmoreland, which is frequently called the lake region of England. The most celebrated are the Ulleswater, Grasmere, Rydal Water, and Windermere on the western border. The principal streams are the Kent, which has a navigable estuary in the county, the Eden, and the Lune. The minerals are graphite, slate, marble, coal, lead, and copper. The soil is not remarkably fertile, but well adapted to grazing. Large herds of cattle of extraordinary size and numerous flocks of sheep are raised. The bacon and hams of Westmoreland have a high reputation. Geese are also raised for exportation. The fresh water lakes yield large quantities of fish, which are exported. The county is traversed by the London and north-western railway from London to Edinburgh, and by the Preston, Lancaster, and Carlisle, with a branch from Kendal to Bowness. The Lancaster canal extends to Kendal in the S. part of the county. Westmoreland sends two members to parliament, one for the county and the other for the borough of Kendal. Capital, Appleby.

WESTMORELAND, Mildmay Fane, 2d earl of, an English poet, born about 1600, died Feb. 12, 1665. At the breaking out of the civil war he declared for the king, but in 1643 took the parliamentary oath. He however concurred in the restoration, and was taken into favor by Charles II. He is the author of *Otia Sacra*, a volume of poems (1648).—John, 11th earl of, an English soldier and diplomatist, born Feb. 3, 1784, died Oct. 16, 1859. He was educated at Westminster school, and entering the army in 1803 saw much service in Sicily, Egypt, Portugal, and Spain. In the last named countries he was aid to the duke of Wellington, being then known by his courtesy title of Lord Burghersh. He acted as commissioner to the allied armies in Germany, and in the succeeding year was appointed minister plenipotentiary at Florence. Subsequently he occupied the latter post for several years. He inherited the earldom in 1841, and was appointed ambassador at the court of Berlin, where he remained until 1851, when he was sent in the same capacity to Vienna. He returned to England in 1855. He was a well known amateur musician and composer.

WESTON, a city of Platte co., Mo., on the Missouri river at the mouth of Bee creek, 500 m. by water and 325 by land W. by N. from St. Louis; pop. in 1860, 1,788. It has 5 churches, a branch bank, a newspaper office, 5 schools, steam saw and flouring mills, a hemp factory, and several carriage and wagon manufactories. It is a usual starting point for emigrants to Utah, Nevada, Colorado, and California by the overland route; and has a large trade in cattle, wagons, provisions, and outfitting goods, for which high prices are obtained.

WESTPHALIA, a name bestowed at different periods upon portions of western Germany differing materially in extent and location and in the form of their government. The territory lying between the Rhine and the Weser is that to which the name properly belongs, and it is said to be derived from the Westphales, an ancient Saxon tribe, who inhabited the territory.—The Duchy of Westphalia, or Sauerland, comprised no portion of the above district, but lay between the Weser and the Elbe, and was made up of a large part of Brunswick and Hanover and some of the smaller states. It was given in 1179 to the archbishop of Cologne as a fief, and remained in the possession of that see till 1802, when it was ceded to Hesse-Darmstadt.—The Circle of Westphalia comprised the territory between the Rhine and the Weser, and the districts north of the duchy of Westphalia lying on and near the North sea, and included the bishoprics of Münster, Paderborn, Osnabrück, and Liége; the principalities of Minden, Meurs, Verden, and Nassau; the duchies of Cleves, Jülich, Berg, and Oldenburg; the counties of Mark, Schaumburg, Ravensburg, Hoya, Pyrmont, Delmenhorst, Lippe, Bentheim, and Diepholz; the seigniories of Anhalt; the abbeys of Corvey, Stablo, and Malmedy; and the free cities of Cologne, Aix la Chapelle, and Dortmund. The elector of Brandenburg as duke of Cleves, and the elector palatine as duke of Jülich, were directors of the circle alternately with the bishop of Münster. This circle ceased to exist at the dissolution of the German empire in 1806.—The Kingdom of Westphalia was created by Napoleon I. in 1807 as one of the states of the confederation of the Rhine. It was bounded N. by Mecklenburg, E. by Prussia and Saxony, S. by Frankfort and Hesse-Cassel, and W. by Berg and the French empire. It comprised all of Prussia W. of the Elbe, and the territories of the electors of Hesse and Hanover and the duke of Brunswick. To this kingdom Napoleon gave a constitution and placed over it his youngest brother Jerome. As a consequence of the battle of Leipsic in 1813 it was occupied by Prussia, but in the following year reverted to its former proprietors.—The Province of Westphalia, now and since 1815 one of the two western provinces of Prussia, is bounded N. by Hanover, E. and S. E. by Schaumburg-Lippe, Hesse-Cassel, Lippe-Detmold, Brunswick, Hanover, Waldeck, and Hesse-Darmstadt, S. by Nassau, S. W. and W. by Rhenish Prussia, and N. W. by Holland; area, 7,819 sq. m.; pop. in 1858, 1,566,441, of whom about 864,000 were Roman Catholics, and 16,000 Jews. It is divided into the administrative districts of Münster, Minden, and Arnsberg. The surface is level or moderately undulating in the N., with extensive marshes, and mountainous in the S. and E. It is drained by the Ruhr, Lippe, Ems, and Weser. There are mines of iron, copper, lead, and zinc, and mineral and saline waters. Linen, cotton, and woollen goods, broadcloths, tobacco, leather, hardware, cutlery, paper, and glass are manufactured. The principal crops are corn, flax, tobacco, hops, and potatoes. Large numbers of horses, cattle, sheep, and swine are reared, and the Westphalia hams have a high reputation. The principal towns are Münster, the capital, the fortress of Minden, Herford, Bielefeld, Paderborn, Soest, Dortmund, and Iserlohn.—The Public Peace of Westphalia is the name given to an agreement made between the emperor Charles IV. and the German states in 1371, for the purpose of maintaining peace in the empire. This agreement recognized the Vehmic courts.—The Treaty of Westphalia, which terminated the 30 years' war, consisted in reality of two treaties, one signed at

Osnabrück and the other at Münster in 1648. The first of these, executed Aug. 6, was concluded between the emperor Ferdinand III. and Sweden and its Protestant allies; the second, signed Oct. 24, between the emperor and France and its Catholic allies. These treaties were the result of long negotiations between the envoys of France, Sweden, the emperor, the states of the empire, Venice, and the pope. Spain, hoping to profit by the troubles of the Fronde, refused to adhere to the conditions of Münster, and continued the war against France up to the peace of the Pyrénées in 1659. The treaties of Westphalia had reference to the adjustment of territorial lines and authority, the future policy of the high contracting parties, and the relations of Protestants and Catholics. Under the first head it was acknowledged that the 3 bishoprics and Alsace, except Strasbourg and Montbéliard, had been conquered by France and were henceforth to belong to her. Sweden was to possess Upper Pomerania, the isle of Rügen, Wismar, and the secularized archbishopric of Bremen and bishopric of Verden, with 3 votes in the diet of the empire and 5,000,000 rix dollars for the payment of her army; the elector of Brandenburg was allowed the archbishopric of Magdeburg, and the bishoprics of Halberstadt, Minden, and Kamin, secularized; the duke of Mecklenburg, the bishoprics of Ratzeburg and Schwerin; the landgrave of Hesse and the duke of Brunswick were to have the abbeys, secularized; the elector palatine, the restitution of the Lower Palatinate and of the electoral dignity, the Upper Palatinate being left to the duke of Bavaria; and the independence of the United Provinces and of Switzerland was formally recognized. The emperor was thenceforward prohibited from doing any thing relative to the general interests of the contracting parties, without the approval of the national diets. The princes, states, and free cities were to be allowed the exercise of territorial sovereignty, that is, the right to govern themselves and their subjects, and to make alliances either with each other or with foreign powers; their number was fixed at 343, of whom 158 were secular princes, 123 ecclesiastics, and 62 representatives of imperial cities. The religious features of the treaty were as follows: the peace of Passau (1552) and that of Augsburg (1555) were confirmed; the advantages which had been accorded to Lutherans were to be extended to Calvinists; the public exercise of religion and the enjoyment of secularized ecclesiastical property were placed upon the same footing as they had occupied previous to the year 1624; 24 Protestants were admitted into the imperial chamber, and 6 into the aulic council. This treaty, which from the importance of its provisions has been called the "international code," assured religious liberty to the Protestants of Germany, guaranteed the equilibrium of Europe, which had been endangered by the predominance of the house of Austria, and advanced France for the time to the first rank among the European powers. Although modified by the peace of Utrecht in 1713, many of its provisions and most of its territorial divisions remained up to the wars of the beginning of the present century.

WETSTEIN, Johann Jakob, a Swiss scholar, born in Basel in 1693, died in Amsterdam in 1754. He studied divinity under his uncle Johann Rudolph and the Hebrew language under Buxtorf at Basel, and became a minister of the national church in 1713. He travelled through Switzerland, France, England, and Germany, to examine and compare various manuscripts of the New Testament; and in 1730 he published *Prolegomena ad Novi Testamenti Græci Editionem accuratissimam.* By those who feared that the received text of the Testament would be unsettled, he was denounced before the council of Basel as an innovator; and he was deposed from his ministry, and a decree was issued against his projected new edition as useless and dangerous. Thereupon he retired to Amsterdam, where the Remonstrants or Arminians appointed him professor of philosophy and history. The decree of the council of Basel was reversed in May, 1733. His edition of the New Testament, consisting of the received text, with the various readings and a critical commentary, was published in 1751-'2 (2 vols. fol., Amsterdam).

WETTE, Wilhelm Martin Leberecht de. See De Wette.

WETZEL, a N. W. co. of Virginia, bordering on Pennsylvania, and bounded N. W. by the Ohio river; area, 360 sq. m.; pop. in 1860, 6,703, of whom 10 were slaves. The surface is very hilly and the soil fertile. The productions in 1850 were 12,162 bushels of wheat, 124,198 of Indian corn, 3,000 lbs. of tobacco, and 12,369 of wool. Iron ore, bituminous coal, and limestone are found in abundance. The value of real estate in 1856 was $891,292, being an increase of 49 per cent. since 1850. The county is traversed along the N. E. border by the Baltimore and Ohio railroad. Capital, New Martinsville.

WEXFORD, a N. W. co. of Michigan, not organized when the census of 1860 was taken, drained by the Manistee river and its tributaries; area, 625 sq. m. The surface is diversified by prairie and woodland, and is interspersed with several small lakes, the principal of which are the Otisgo lakes in the S. E. part.

WEXFORD, a S. E. county of Ireland, province of Leinster, bounded N. by Wicklow, E. and S. by St. George's channel, S. W. by Waterford, and W. by Kilkenny and Carlow; area, 901 sq. m.; pop. in 1861, 143,594. The chief towns are Wexford and New Ross. The N. E. part of the coast is low, faced by sand banks, and has no harbors, but the S. E. and S. shores are indented by several bays and havens. The surface in the interior rises toward the N. W. and becomes mountainous, but the S. E. portion is level. The chief rivers are the Slaney, with its tributaries the Derry and Bann, and the Barrow. The soil is mostly clayey and not very fertile, and the climate is mild and agreeable. Oats, wheat, barley, and potatoes are the principal crops; and dairy farming is carried on to a considerable extent. Some woollen cloths and coarse linens are manufactured. Wexford returns 4 members to parliament, 2 for the county, and one each for the towns of Wexford and New Ross.

WEYMOUTH, a township of Norfolk co., Mass., lying on Boston harbor, 12 m. S. S. E. from Boston, by the south shore railroad; pop. in 1860, 7,742. The N. part of the township is a peninsula between two friths called Fore and Back rivers. There are several important villages in the town, of which Weymouth Landing or Washington Square, East Weymouth, and South Weymouth are the principal. Weymouth Landing is at the head of Fore river, and has a considerable interest in ship building, the fisheries, and the coasting trade. About 1,000 tons of shipping are owned here and employed in the fisheries. It has also a large trade in timber, coal, flour, and grain. East Weymouth has a large nail manufactory. South Weymouth is extensively engaged in the manufacture of boots and shoes. The town has a bank with a capital of $200,000, a savings bank, an insurance company, a loan and fund association, numerous schools and churches, and a town house.

WHALE, the popular name of the typical or carnivorous cetacean mammals, with fish-like forms, embracing the families *balænidæ* or baleen whales, *physeteridæ* or sperm whales, and *delphinidæ* or dolphins (including beside the dolphins the porpoises, grampus, and narwhal, described under their respective titles). The first two families are of enormous size, with a disproportionately large head, the body tapering posteriorly and ending in a broad tail whose flukes extend horizontally; this tail, the principal organ in swimming, and especially in coming to the surface for the purpose of respiration, is supported on a firm cartilaginous basis, having neither bones nor caudal rays; the anterior limbs are converted into powerful fins, enclosed in a uniform skin, but containing the usual bones of the vertebrate arm, though much shortened and with more numerous phalanges; the sacrum and posterior limbs are wanting, the only traces being a pair of V-shaped pelvic bones, suspended among the muscles and detached from the spine; V-shaped bony arches extend from the first caudal vertebra, gradually growing smaller toward the end of the tail. The cranium is very small, the chief bulk of the head being made up of the facial bones; though the cervical vertebræ are evident in the skeleton, generally consolidated with the exception of the first, there is externally no trace of neck; the nostrils open on the top of the head, by a double or single foramen, constituting the blow-holes or spiracles, for purposes of respiration and the expulsion of water, and not for the exercise of smell; there is no external ear, and the auditory opening is extremely small to prevent the undue access of water, air penetrating into the large Eustachian tubes through the blow-holes, permitting the appreciation of sounds both in the water and in the air; the eyes are small, and apparently very far back on account of the development of the face. The head forms ¼ or ⅛ of the total length of the body, and the skull is usually unsymmetrical, the right side being larger than the left; the petrous portion of the temporal bone is attached to the skull by cartilage; the mouth is very wide, and the jaws armed with plates of whalebone or numerous conical teeth. The skin is naked, with the exception of a few bristles about the jaws, and beneath it is a thick coating of fat or blubber, preserving the temperature of the body and reducing its specific gravity, and affording the oil for which these animals are chiefly pursued. The older naturalists regarded the blubber as subcutaneous, but more recent observations show it to be a part of the true skin, the fibres forming an open network in which the fat is held. The skin is infested with parasites, especially the crustacean *cyamus ceti* (Lam.) or whale louse, and barnacles and mollusks are often found attached to the sperm whale and rorqual. The flesh is red, firm, and coarse; the bones are less compact than in terrestrial mammals, and without medullary cavity. During respiration the conical larynx projects upward into the posterior nares, and is closely embraced by the muscles of the soft palate, opening a free passage from the lungs externally through the blow-holes, even though the whole head be submerged and the mouth filled with water. In the expulsion of water (which is denied by some and admitted by others), it is forced into the nasal cavities while the animal performs the act of swallowing, the pharynx being closed to prevent its passage beyond the proper point, and the forcible contraction of the muscles surrounding the passages sends it out in a jet; expiration, carrying with it a jet of vapor, is performed in a similar manner. Though all are carnivorous, the stomach has from 3 to 6 compartments. In order to provide a constant supply of arterial blood during submersion, there are plexuses of arteries situated within the chest and spine, noticed in the article DOLPHIN.—The whales embrace the largest of living animals, and have been known in all ages, but were generally and naturally enough regarded as fishes even by naturalists to the time of Linnæus, and are so now by persons ignorant of natural history; they are, however, true mammals, warm-blooded, air-breathing, bringing forth their young (usually one) alive, and suckling them for a considerable period by means of two abdominal mammæ. They mostly occur in large shoals in the arctic and antarctic seas, and are often seen sporting on the surface of the ocean; that the pectorals are not locomotive organs, but balancers and rudders, might be supposed from their small size when compared with the tail; when life is extinct they fall over on the back; the young are also held by these limbs.—In the *balænidæ* or baleen whales there are no teeth in the adult, though there are in the embryo, but from the early ossification and coalescence of the groove in which they lie, they do not come into view; the mouth is provided with numerous plates of the horny substance well known as whalebone or baleen; along the centre of the palate runs a strong ridge, and on each side of this a wide depression along which the plates are inserted; these are long and flat, hanging free, placed transversely, with their sides parallel and near each other; the base and outer edge are solid whalebone, but the inner edge is fringed, filling up the interior of the mouth and acting as a strainer for the food, which consists chiefly of the small swimming mollusks (like *clio borealis*) and medusæ or jelly fishes, very abundant in the arctic seas. It rarely, if ever, swallows any thing larger than a herring; shoals of these small creatures are entangled in the fibres of the baleen, the water which does not escape by the mouth being expelled by the blow-holes; though the cavity of the mouth is large enough to contain a ship's long boat, the opening of the gullet is not larger than a man's fist. The lower jaw has neither baleen nor teeth, but has large fleshy lips within which the upper is received when the mouth is closed. In the genus *balæna* (Linn.) there is no dorsal fin; the baleen whales with a dorsal fin have been described under RORQUAL. The right or Greenland whale (*B. mysticetus*, Linn.) attains a length of 60 to 70 feet, the tail being 5 or 6 feet long and 20 to 25 in width; the general color is blackish above and grayish white below; pectorals 8 to 9 feet long and 4 or 5 wide; the mouth is 15 or 16 feet long, 6 to 8 wide, and 10 to 12 high inside, presenting a sigmoid curve when shut; the eyes are not larger than those of an ox, with a white iris, and placed about a foot obliquely above and behind the angle of the mouth; the tongue is soft, thick, fatty, and very slightly movable; the tail is of immense power, whether as an instrument of progression or for striking its animal or human pursuers. The ordinary rate of progress is 4 or 5 miles an hour; they swim not far beneath the surface, and throw themselves in sport entirely out of water; they are fond of immersing the body perpendicularly and flapping the tail on the surface, making a sound heard for 2 or 3 miles; they usually come up every 8 or 10 minutes, but can remain down half an hour or more; they generally keep on the surface about 2 minutes, during which they blow 8 or 9 times, and then descend; they feed swimming just below the surface, with the mouth wide open. They are found in most parts of the arctic seas, and are specially hunted by American and English whalers about Baffin's bay; the vessels arrive about the end of April, and continually keep a sharp lookout. (See WHALE FISHERY.) Important as the whale has been to civilized nations, it is still more so to the arctic races, who use the oil to light and warm their huts and for drink, the blubber and flesh for food, the internal membranes for articles of clothing and as a substitute for glass in their windows, the bones and baleen in making tents, sledges, boats, harpoons, and spears, and the sinews for thread. Gestation has been variously placed at 9 to 15 or 18 months; the young measures at birth 10 to 14 feet in length, and is tenderly cared for by the mother for a year or more; during nursing they gently roll from side to side horizontally, so that each in turn may have an opportunity to breathe; the young furnish but little oil, and are never struck by the harpoon unless to capture the mother by means of her extraordinary affection for her progeny. According to Prof. J. Wyman, in an embryo 6 inches long, the tail was rounded as in the manatee, with a vertical crest above and below it, and the thymus gland very large, almost enveloping the heart. The southern or Cape whale (*B. australis*, Desmoulins) attains a length of 50 or 60 feet, and has a relatively smaller head than the northern species; it inhabits the southern ocean, generally near the coast, and in comparatively shallow water; it goes up the Pacific even to Japan and Kamtchatka, the Atlantic as far as the United States, and all along the African coasts; it is hunted in summer, when the shoals come near the shore to produce their young; the principal fisheries are about New Zealand and S. Africa.—The family *physeteridæ* or *catodontidæ*, or the sperm whales, have no baleen plates, but 40 to 50 conical teeth in the lower jaw with internal cavities; this is shorter and narrower than the upper, and completely enclosed by it when the mouth is shut; the teeth fit into cavities in the upper jaw, which has some rudimentary teeth concealed in the gums; the head is of enormous size, ⅓ the whole length of the body, nearly cylindrical, truncated in front with a single *f*-shaped blow-hole in the anterior margin of the snout; the greater part of the bulk of the head is made up of a cartilaginous envelope or "case," containing an oily fluid hardening on exposure to the air, and well known as spermaceti; there is a false fin or protuberance on the hind part of the back. The old genus *physeter* (Linn.) has been variously subdivided by modern authors, and not always on what seem sufficient grounds. The best known and largest of the sperm whales is the *P. macrocephalus* (Shaw), or blunt-headed cachalot of the whalemen; it belongs to the genus *catodon* of Lacépède. The males attain a length of 60 to 75 feet, and the females are about half as long; the color is blackish and greenish gray above, whitish beneath and about the eyes. The skeleton is very similar to that of the dolphin, except in the head; the cervicals are 7 and united except the first, dorsals 14 or 15 with as many pairs of ribs, and the other vertebræ 38 to 40, with strong processes and of nearly the same size to within 7 or 8 of the end; the pectoral limbs are 4 to 6 feet long and 2 to 3 wide; dorsal protuberance about 2 feet high, and blow-hole about a foot long; eyes larger than in the right whale, and tongue thick and soft; mammæ about a foot in diameter, concealed in folds of the skin, with a nipple several inches long; the mouth is immense, and the gullet is capable of swallowing an object as large as a man. They are distributed in all seas, but principally in those of the southern hemisphere, living in deep water and very rarely approaching land; they are usually seen in companies of 20 to 50 females and young, with one or two old males or bulls; they feed chiefly on cuttle-fishes and other cephalopodous mollusks abundant in the southern seas; the males fight savagely, as their distorted and broken jaws fully testify; they are said to swim with the lower jaw open almost at a right angle with the head when feeding, which would account for the fat condition of many whose deformed jaws would seem to render impossible the capture of prey in the ordinary manner; the skin must be quite insensible, if we may judge from the barnacles and mollusks often found adhering to it. Inspiration must be very quickly performed, as the nose is rarely out of water more than a few seconds at a time; they make 60 or 70 respirations while remaining about 10 minutes at the surface; when the spoutings are over, if undisturbed they descend, remaining down from half an hour to an hour. They are eagerly hunted, as their oil is the finest for burning, and the spermaceti valuable for the manufacture of candles and for medical purposes; ambergris, highly prized in the making of perfumery, is also a product of the intestines of the sperm whale; the blanket or blubber of a single individual will yield 80 or more barrels of oil; the spermaceti is contained in tendinous compartments communicating with each other, and the product of a single one is sometimes more than a ton; as a rough estimate, the yield of spermaceti is about ⅕ that of oil. Though naturally timid, it is more dangerous to attack than the baleen whale, both the tail and teeth being used as offensive weapons, and a whole shoal sometimes coming to the assistance of a wounded comrade; the stoutest ship will spring a leak after having been struck by the powerful head of one of these immense creatures. Other smaller species are found in the northern seas.—The beluga or white whale, common in the gulf of St. Lawrence, and recently in Boston rendered so docile as to feed from an attendant's hand, and in harness to draw a shell-like boat around an aquarial tank, and the deductor or *globiocephalus*, have been described under Dolphin. The diodons have no teeth in the upper jaw, only 2 in the lower, a depressed forehead, and the lower jaw much larger than the upper; a rare species is found in the Mediterranean, 15 or 16 feet long. The hyperoödon or bottle-nosed whale of Honfleur has a rounded and prominent forehead, a short and strong beak; it is rare, and attains a length of 20 to 25 feet. In the aodon or toothless whale of Havre, the body is fusiform, with a distinct appearance of neck, jaws prolonged into a cylindrical beak without teeth; it attains a length of 15 to 20 feet, is very rare, and seems to connect the whale with the dolphin family. —Fossil whales have been found in the upper tertiary and the diluvial formations of America and Europe; their remains have been obtained in the Green mountains near Lake Champlain, 60 feet above the lake and 150 above the sea, in clay strata, one of the great number of proofs everywhere forced upon our notice of an ancient distribution of land and water upon this continent very different from the present, and of remarkable changes of level.—The grampus, a cetacean of the dolphin family, is generally called the killer, from the belief, probably well founded, that it attacks the baleen whale in herds, worrying and biting it to death.

WHALE FISHERY. The whaling business is prosecuted from only a few ports in any country. In the United States the principal whaling ports are: New Bedford, Fairhaven, Nantucket, Westport, and Edgartown, for the sperm whale fishery mainly, in which Provincetown and Holmes's Hole have also employed a few vessels; and New London, Mystic, Stonington, Sag Harbor, Greenport, and Warren, R. I., principally engaged in the right whale fishery. The business as now conducted requires a large amount of capital, the sperm whale fishery needing more for its successful prosecution than that of the right whale. The vessels employed are usually old, since those which have been in the merchant service for several years, if sound, are equally adapted to the purpose with new ships, and much cheaper. A whale ship once saturated with oil does not rot; and in several of the whaling ports vessels are still in use which were built half a century since. Speed is not so much a requisite of a whale ship as large capacity for stowage in proportion to her government tonnage. They seldom measure over 500 tons, and the average is from 300 to 400 tons. The outfit for a whale ship is from 4 to 7 boats of peculiar construction, to each of which is assigned its crew; a number of empty casks for oil; two or more try-pots with their apparatus for "trying out" the oil; large quantities of superior cordage and spars, harpoons, lances, cutting spades, and knives; an apparatus for chopping the blubber; and an ample supply of provisions (generally of the plainest character, "hard tack and salt junk") and water. The crew, which varies in number according to the size of the vessel, is larger than that of a merchant vessel of the same size. It is generally composed of men of all nations, the officers and boat steerers being usually Americans, and the remainder Malays, Sandwich or Society Islanders, 'Gees (that is, Portuguese from the Canary, Cape Verd, or other Atlantic islands), negroes, Hindoos, &c. They are divided into boats' crews of 5 or 7, under command of the boat steerer, so called, though his duties are not confined to steering the boat. Each man of the crew, from the captain to the cabin boy, has an interest in the future cargo, and this interest, technically called a "lay," constitutes his compensation for the voyage. With the common sailors this lay is from $\frac{1}{125}$ to $\frac{1}{170}$, or if the vessel is large $\frac{1}{190}$ of the proceeds of the cargo. The owners make advances to the hands of clothing and other necessaries, to be deducted at the end of the voyage from their lay. The boat steerers receive from $\frac{1}{95}$ to $\frac{1}{125}$, according to the size of the vessel, and the higher officers more in proportion. The voyage of a sperm whaler usually lasts 3 or 4 seasons or years; that of a right whaler one or two seasons, and occasionally, if luck is poor, 3 seasons. It is not uncommon for a right whale ship, especially if she comes upon a new whaling ground, to fill up completely and return within a twelvemonth.—The principal species of whale hunted have been described in the article WHALE. The *balæna mysticeta*, or right whale, is found with rare exceptions only within the arctic circle, and is the source from which most of the whale or "train" oil is derived. Its congener, the *balæna australis* or Cape whale, has not been so long or so closely hunted as the right whale, and its range is greater, extending from within the antarctic circle to the E. and W. coasts of America and Africa, and the E. coast of Asia. Its oil and whalebone are not so highly valued as those of the right whale. The finback (see RORQUAL) is less abundant and less easily captured, but its oil is of good quality. The bowhead whale, also a *balæna*, is found only in the sea of Okhotsk and the Arctic ocean. All these are inhabitants of cold latitudes, and the vessels intended for hunting them are required to be stronger and better provided with material for resisting the intense cold than those intended for hunting the sperm whale (*physeter macrocephalus*), which is only found in tropical and semitropical latitudes. There are other genera and species of the sperm whale, but all are characterized by the absence of the baleen or whalebone, the presence of conical teeth from 8 inches to a foot in length, and the reservoir of spermaceti and sperm oil in the head.—The right whale ships leave their ports in April or May, so as to take advantage of the short arctic summer; or if they are to hunt whales on the N. W. coast, they go in the autumn to reach there the ensuing summer, stopping for a while at the Bay of Islands, New Zealand, or the Pacific islands to hunt sperm whales. For hunting the Cape or antarctic whale they also leave port in the autumn, usually stopping at St. Helena on their outward and return voyage, either for more hands or for further supplies. The sperm whalers can sail at any season, but usually prefer leaving port in the autumn. The haunts of the right whale have changed under the constant pursuit of its captors. In the early part of the present century right whales were abundant in Baffin's bay and along the W. coast of Greenland, but after some years they deserted that region altogether. They were next found in Hudson's bay, and when driven thence they appeared in great numbers on the N. W. coast of America, and in the vicinity of Behring's straits. Here and within the Arctic ocean they continued to be abundant for a number of years, when they abandoned that region, and of late have been found in great numbers in the N. W. part of Hudson's bay.—The implements used for the capture of the whale are the harpoon, the lance, and the harpoon gun. The harpoon is a heavy barbed iron, very sharp on the cutting edges, having a shank partly of wood 2½ or 3 feet in length, and attached to a strong rope carefully coiled in a tub; it is hurled by the boat steerer with his utmost force at the moment when the boat is nearest to the whale, and if possible in contact with it. The lance is a long spear-like instrument, the head oval, and the blade 5 or 6 inches long and 2½ to 3 wide, not very thick, but with keen cutting edges, the shank fitted with a long wooden handle; it is used only when the whale rises after being struck deeply with one or more harpoons, and is apparently much exhausted, when it is thrust if possible into a vital part. The harpoon gun is an English or Dutch invention for hurling the harpoon by the force of powder instead of human muscle; though used to some extent, it has not much reputation among the older whalemen. Some other improvements have been attempted in the apparatus for killing whales; one instrument had in the shank of the harpoon a fulminating powder, which was exploded by the whale in running after being struck by the harpoon; another contained a bottle of prussic acid, which it was expected would be crushed and absorbed into the blood vessels of the whale in the same way; but most whalemen eschew these inventions, and adhere to the harpoon and lance.—The process of capture is substantially the following: When the whale ship arrives in the vicinity of a whaling ground, a lookout is stationed at the masthead. As soon as a whale is discovered, the whale boats are lowered, and each crew exerts its utmost strength to reach the whale first. If the crews of two ships spy the whale at the same time, as sometimes occurs, the rivalry is still more intense; the boats almost fly over the water. In the bow sits the boat steerer or harpooner* with his tub at his feet, the harpoon and 2 or 3 coils of the rope ready to be seized at the right instant; he stimulates his crew constantly to still greater exertion, and at the proper moment he seizes the harpoon in his right hand and the coil of rope in his left, and, as the bow of the boat touches or nears the whale, hurls his harpoon with all his force, aiming at a vital point, and crying: "Stern all." The crew instantly back the boat, and the whale in its terror plunges below the surface, and dives with such velocity that water must be constantly poured upon the line to keep it from setting the boat on fire by its friction. The line, often 100 fathoms in length, is soon exhausted, and a second attached, and sometimes a third. The whale stays under water from 20 to 60 minutes, and when it rises the boats hasten to it as rapidly as possible and again strike it with their harpoons; as soon as it feels a second wound it descends again, usually striking as it goes down with its formidable tail in the hope of destroying its foes, in which it sometimes succeeds. It stays below the surface but a short time, however, and on rising again gives symptoms of distress, spouting bloody water or blood alone through its blow-holes. The boats again approach and endeavor to lance it in a vital point. If they are successful, it sometimes turns upon its side or back and dies suddenly and quietly; oftener its death struggle is terrific, the water being dyed with blood and beaten into foam by the lashings of its tail, which may be heard for miles. If it dies upon the surface, its body can be secured; but if in its last agonies it again descends, the body sinks beneath the waters, and does not rise perhaps for months, if at all. In this way almost every whale ship loses some of its giant game. The capture of the sperm whale is in many respects similar, though attended with somewhat more danger. The sole weapon of defence of the right whale is its tail, a blow from which would crush the stoutest boat like an egg shell. But the sperm whale is better armed; while its tail is equally formidable, it can stave in a ship's side with its snout, or crush a boat in its mouth. Its power of running is also superior, and its ability to remain below the surface greater than that of the right whale; but once captured, its carcass is very valuable. The oil yielded by its blubber is purer and of greater value than that of the right whale, and spermaceti is obtained from the head. It occasionally happens that a dead whale is found floating upon the ocean, either one which, though escaping from its pursuers, was so much wounded as subsequently to die, or one which had perished from disease, to which the sperm whale is subject. On the intestines of these latter are often found large quantities of the ambergris of commerce, which commands a high price.—The whale when captured is towed to the ship, and the process of "cutting in" commences. The carcass is made fast to the side of the ship by chains, and a part of the crew with cutting spades in hand descend to the platform rigged over the ship's side, and, cutting into the blubber, loosen one end of the strip from the whale, while one of their number is lowered to attach to it one of the immense hooks which are fastened to the masthead, and the remainder of the crew proceed to hoist it to the deck, the cutters aiding with their spades in severing the skin till a broad strip 20 or 30 feet in length, called the blanket, is hoisted in, another hook being attached meanwhile at a point below, and the blanket severed with a long sharp knife a short distance above this second hook. The carcass of the whale is rolled over and over till entirely stripped of blubber. These masses of blubber on reaching the deck are cut up in square pieces and packed in the casks to await the process of trying. Before the right whale is thus stripped, others of the crew are lowered into its mouth and remove the baleen or whalebone, which, if the animal is of average size, weighs nearly a ton. (See Whalebone.) When stripped of its blubber and whalebone, the carcass is cast off, and the flesh is stripped off by the sharks, bears, and vultures. In the case of the sperm whale the process of cutting in is somewhat different. The reservoir of sperm oil and spermaceti in the head must be secured by cutting off the head, which constitutes one third the length of the body. The men descend, and laying bare the vast cistern fill the buckets as they are lowered, eventually descending into the cavern, where there is often room for two full-grown men in a single compartment, and for 8 or 10 in all, and scoop up the half liquid mass till the cavity is completely emptied. This is sometimes done before and sometimes after the blubber is stripped off from the remainder of the carcass, which is done as in the case of the right whale.—The casks being filled with blubber, the process of "trying out" the oil is commenced in the sperm whale fishery, if near land, on shore; in the right whale fishery usually on shipboard. After the first try-pot is strained, the scraps or cracknels (the cellular tissue from which the oil has been expressed) serve for fuel, and the process is continued with abundant smoke, soot, and grease, till the whole blubber has been tried, and the casks not filled with oil are ready for the results of another catch. This process is repeated till the vessel has its full cargo, or till from repeated disappointments, or the sickness of the crew from scurvy, which in the right whale fishery is very prevalent (though less so now than formerly), it becomes evident that the further prosecution of the voyage is unadvisable. The oil, sperm oil, and spermaceti thus rudely expressed are known commercially as "crude" products, and on their arrival at the home port are transferred to a refinery, where they undergo further processes of purification.—The whale fishery has greatly fallen off within the past 5 years in the United States. Its decline had commenced earlier in Europe, but the deficiency of the receipts from their own whaling ships was made up by imports of oil, bone, and spermaceti from the United States. Among the causes of the decline are the scarcity of whales from their being so constantly hunted; the increasing use of gas and mineral oils, and the production of stearine and paraffine, which to a considerable extent have taken the place of spermaceti; and the substitution of steel for whalebone in many articles of female clothing, umbrellas, parasols, and the like, and of hard rubber or vulcanite in other cases in which it was formerly used. In 1830 there were 102,000 tons of shipping engaged in the whale fishery from United States ports, of which 62,000 were in the sperm and 40,000 in the right whale fishery. About 8,000 seamen were engaged in it. The products of the fishery for that year were 106,800 bbls. of sperm oil, 115,000 bbls. of whale oil, and 120,000 lbs. of whalebone; and 2,500,000 lbs. of sperm candles were made. In 1840 the tonnage employed had increased to 137,000. In 1850 it was 181,644, and the receipts of the year ending June 30, 1857, were 99,961 bbls. of sperm oil, 928,483 bbls. of whale oil, and 3,916,500 lbs. of whalebone. In 1853, 240 vessels arrived, and their cargoes were 103,077 bbls. sperm oil, 260,114 bbls. whale oil, and 5,652,300 lbs. bone. This was the highest point reached except in whale oil, which had attained to its highest amount in 1850-'51. In 1857 the entire whaling fleet from the United States consisted of 670 vessels, of which 358 were ships, 259 barks, 17 brigs, and 46 schooners; the aggregate tonnage was 220,000, and, reckoning the value of whaling property as is usually done at $100 per ton, the investment was $22,000,000. At the close of the year 1860 the number of vessels had diminished to 514, with an aggregate measurement of 160,841 tons; the receipts of the year were 73,708 bbls. sperm and 140,005 bbls. whale oil, and 1,337,650 lbs. whalebone. In June, 1861, the amount of tonnage engaged in the business had fallen to 145,734, a loss of probably 40 to 50 vessels. The receipts for that year are not reported. The larger part of the bone and about half the sperm oil are exported. In 1856 the exports were 29,052 bbls. sperm oil, 971 bbls. whale oil, and 2,000,784 lbs. bone; in 1860, 32,792 bbls. sperm oil, 13,007 bbls. whale oil, and 911,226 lbs. whalebone. The value of these exports in 1860 was: sperm oil, $1,789,089; whale oil, $537,547; whalebone, $896,293; spermaceti, $51,829. The prices of these articles have varied greatly during the last 12 years. The crude whale oil in 1849 was worth 36 cts. per gallon; in 1852, 75 cts.; in 1853, 52 cts.; in 1856, 75 cts.; in 1861, 40 cts. The manufactured whale oil was 49 cts. in 1849, 86 in 1856, and 57 in 1861. The crude sperm oil was $1.04 in 1849, $1.25 in 1853, $1.80 in 1856, and $1.37 in 1861. The manufactured sperm at the same dates was $1.12, $1.31, $2.05, and $1.60. Whalebone in 1849 was 29 cts. per lb.; in 1853, 31 cts.; in 1856, 62 cts.; in 1858, $1; and in 1861, 75 cts.—The whale fishery in Great Britain, once of considerable magnitude, has of late years been almost entirely abandoned. In 1833 there were 129 ships engaged in it, and the value of the products received was £437,283. In 1842 the number of ships was 75, and the value of products £364,680. In 1852 only 4 ships were sent out, and the entire tonnage belonging in England engaged in the business was only 16,113. In the Australian and New Zealand colonies, however, small vessels are fitted out in considerable numbers for the pursuit of the Cape and sperm whale, and from their proximity to the hunting grounds they are able to complete the voyage in a single season. France in 1837 had 44 ships engaged in the whaling business, measuring 19,128 tons, and with crews numbering 1,615 men. In 1858 she had only 3 ships, measuring 1,650 tons, and the products were valued at 932,180 francs. Holland, which was once largely interested in this fishery, has also almost entirely abandoned it, having in 1854 only 3 vessels engaged in it. From some of the English, German, and Danish ports small fishing smacks go out to capture the *beluga* or white fish, a smaller species of whale, which is occasionally found in shoals on the English and Scottish coasts, and in the North sea. On the coast of Brazil, a small black whale (*globiocephalus*) is found, which is hunted in boats from the shore, and about 100 are taken annually.—The whale fishery has been prosecuted for more than 600 years. The bay of Biscay in the 12th, 13th, and 14th centuries swarmed with one of the smaller species of whale, probably either the *beluga* or *globiocephalus*, and the Biscayans became adepts in their capture. They used the flesh as food, and the baleen or whalebone (for the whales they caught were right and not sperm whales) was sold at a high price. After the discovery of America, the voyages of English and Dutch explorers to the northern seas led to the discovery of the northern haunts of the *balæna* or great "right" whale, and the Dutch entered largely into the whale fishery. Great numbers were found in the vicinity of the island of Spitzbergen, and the Dutch erected a considerable village, which they named Smeerenberg (*smeeren*, to melt), on the coast of that island as a resort for their ships for boiling the blubber. After some years the whales abandoned the shores of Spitzbergen and were found on the Greenland coasts, and the Dutch ships brought the blubber home. In 1614 the fishery was made a monopoly of a single company, but in 1642 it was thrown open to all who chose to enter upon it, and for the next 50 years the Dutch were the oil factors of Europe. In 1680 they had 260 ships and about 14,000 sailors engaged in this fishery; but from that time their traffic in oil began gradually to decline. England attempted to take the place which Holland had occupied in the fishery, but with slight success. In 1732 she offered a bounty of 20 shillings a ton to every ship engaging in the capture of whales, and in 1749 raised it to 40 shillings; but even this large bounty brought a comparatively small number of ships into the business. In 1815, when the fishery was at its height, there were only 164 ships engaged in it. The New England colonies embarked in this fishery at an early period. In 1690 and for 50 years later it was prosecuted in boats from their own shores, as it is now from Brazil, the whale being a frequent visitor of the coasts and bays of New England. In 1740, the whales having abandoned the coast, the fishermen followed them in larger vessels and to the arctic and antarctic coasts. In 1778, and for several years subsequently, Massachusetts alone employed 304 vessels, measuring about 28,000 tons, in the northern and southern whale fisheries. Burke in 1774 rendered a high but deserved tribute to the energy which the New England colonies had displayed in these enterprises. At first their attention was turned to the capture of the right whale, but in 1712 one Christopher Hussey of Nantucket, being driven off shore, fell in with and killed a sperm whale, and within a few years the Nantucket fishermen were equally ready to capture one as the other. In 1778 nearly one half the whale ships from Massachusetts were from Nantucket. That island, Martha's Vineyard, and Cape Cod monopolized the business till 1783, when New Bedford, now the largest whaling port in the world, commenced sending out whale ships. Nearly one half the entire whale fishery of the United States is now conducted from that port, although even there it has diminished materially within a few years.—See "Etchings of a Whaling Cruise," by J. Ross Browne (New York, 1846); "The Whale and his Captors," by H. T. Cheever (New York, 1850); "Moby Dick, or the White Whale," by Herman Melville (New York, 1855); "The Whale Fishery" (New York, 1855); and "Whaling and Fishing," by Charles Nordhoff (Cincinnati, 1857).

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* Formerly the forward oarsman on the right or starboard side was the harpooner, and the boat steerer used the lance to kill the whale at his second or third rising; but the exhaustion of the oarsman from rowing, which often occasioned a failure, and the necessity of changing places with the boat steerer at the time of using the lance, have led to the change, which has been found of great advantage.

WHALEBONE, or BALEEN, the horny laminated plates or blades found in the mouth of the *balæna* or right whale. These plates, which number about 300 in the mouth of a full-grown animal, are from 10 to 15 feet in length, and serve the purpose of retaining the mollusks, medusæ, and other small fry which compose the food of the right whale. The whalebone is not properly bone, but bears a strong resemblance to the horns of cattle, the hoofs of the horse, or the nails and hair of the human species. It is almost identical in structure with the horn of the rhinoceros. Three kinds are distinguished in commerce, though there is little difference in the quality: the Greenland, the South sea, and the north-west coast bone. The greater part of it is collected by American vessels, and a few years since the amount received ranged from 3,000,000 to 5,000,000 lbs.; but with the decline of the trade it has fallen off to about 1,500,000 lbs. It is used for a great variety of purposes; for the ribs or stretchers of umbrellas, parasols, &c.; for stays, brushes, whip handles, the manufacture of hair cloth, for hats and bonnets, upholstery purposes, canes, &c. The increasing price has led to the substitution for it of steel, vulcanite, and rattan saturated with certain ingredients. When first introduced into Europe, its origin was so little known that in France a royal edict reserved the tail of the whale as the queen's perquisite for her wardrobe.

WHARFINGER, in law, one who receives goods upon his wharf, there to remain until they are called for by the owner or consignee, or are otherwise disposed of by law. Some authorities incline to hold him, as bailee, under the stringent liabilities of a common carrier. We think this is not law, and regard his duties and liabilities as analogous to those of warehousemen; and he becomes a warehouseman if he takes the goods from the wharf into his store or warehouse. (See WAREHOUSEMAN.) The rights and duties of wharfingers in large cities are sometimes defined in terms publicly announced, or by police regulations, or by a usage having, probably, the force of law.

WHARTON, a S. E. co. of Texas, bounded on the N. E. by the San Bernard river, and intersected by the Colorado; area, 1,080 sq. m.; pop. in 1860, 3,380, of whom 2,734 were slaves. The surface is generally level, and the soil highly fertile. The productions in 1850 were 103,700 bushels of Indian corn, 35,690 of sweet potatoes, 317 hhds. of sugar, and 2,892 bales of cotton. Capital, Wharton.

WHARTON, FRANCIS, an American jurist, born in Philadelphia in 1820. He was graduated at Yale college in 1839, and afterward practised law in his native city. In 1856 he became professor of logic and rhetoric in Kenyon college, Gambier, Ohio, and still retains that office. He has written the following works, some of which have passed through several editions: "Treatise on the Criminal Law of the United States" (2 vols.); "State Trials of the United States during the Administrations of Washington and Adams" (8vo., Philadelphia, 1849); "A Treatise on the Law of Homicide in the United States" (8vo., 1850); "A Treatise on Medical Jurisprudence" (8vo., 1855); and "A Treatise on Theism and Scepticism" (1858). He has also contributed largely to various periodicals.

WHARTON, HENRY, an English clergyman and author, born in Worstead, Norfolk, Nov. 9, 1664, died in Newton, Cambridgeshire, March 5, 1695. He was graduated at Caius college, Cambridge, in 1684, and in 1686 assisted Dr. William Cave in the compilation of his *Scriptorum Ecclesiasticorum Historia Literaria* (1688). He was soon afterward appointed one of the chaplains of Archbishop Sancroft, and took priest's orders in 1688. The remainder of his life was unremittingly devoted to literary labors, and the number of works produced by him, in view of the early termination of his career, is almost unexampled in literary history. Beside writing 8 or 9 treatises, directed principally against the Roman Catholics, before he had taken orders, he published *Anglia Sacra* (2 vols. fol., 1691), a collection of ecclesiastical biographies; "A Defence of Pluralities" (8vo., 1692); an 8vo. pamphlet containing severe strictures on Burnet's history; and edited some previously unpublished works by the Venerable Bede, and the "History of the Troubles and Trials of Archbishop Laud." Two volumes of his sermons were published after his death.

WHARTON, Thomas Wharton, marquis of, an English statesman, born about 1640, died in London, April 2, 1715. He was the eldest son of Philip, 4th Baron Wharton, a rigid adherent to the parliament during the civil wars, and with his father was among the first to join the prince of Orange upon his arrival in England in 1688. He held several important offices under William III., and subsequently acted as one of the commissioners for arranging the treaty of union with Scotland. He succeeded to his father's title in 1696, and in 1706 was created Viscount Winchenden and earl of Wharton. In 1708 he was appointed lord lieutenant of Ireland, which office he held for two years; and upon the accession of George I. he was created marquis of Wharton, and lord privy seal in the Halifax ministry. He was throughout life a devoted whig, and unrivalled as a party manager, but, according to his political adversaries, utterly void of principle in every thing but politics, at once a libertine, liar, and blasphemer without parallel; an opinion in which Macaulay and other later writers agree. Swift says: "He was the most universal villain I ever knew." According to Bishop Percy, he was the author of the famous Irish ballad of "Lillibulero."—Philip Wharton, duke of, son of the preceding, born in Dec. 1698, died in Catalonia, Spain, May 31, 1731. Being intended by his father for public life, he was early imbued with whig doctrines, and for the purpose of confirming him in these views, it was thought essential to educate him in the Presbyterian faith. He inherited however his father's volatile disposition and his tastes for debauchery and extravagance, and at 16 years of age made a private marriage with a lady far inferior in rank to himself, which so disconcerted the ambitious schemes of his parents that they both died heart-broken, it is said, within a year. In conformity with his father's plans, however, he repaired in 1716 to Geneva to complete his education, but soon parted from his Calvinist tutor, and travelled to Avignon, where he had an interview with the pretender and received from him the title of duke of Northumberland. He next repaired to Paris, where he was on friendly terms with the widow of James II., the queen dowager of England, from whom he borrowed £2,000, which she raised by pawning her jewels, and which he is said to have promised to employ in furthering the interests of the Jacobites. Returning to England in the latter part of 1716, he was permitted soon after, though scarcely 19 years of age, to take his seat in the Irish house of peers as earl of Rathfarnham and marquis of Catherlough, Irish titles inherited from his father. He at once took high rank as a debater, and so zealous was his support of the ministry, that within a year he was created duke of Wharton in the English peerage—an almost unexampled instance of promotion. In 1720 he took his seat in the English house of peers, where, with a total disregard of his own interests, he soon threw the weight of his brilliant talents into the scale against the ministry. Within 3 years his estate, estimated at £16,000 a year, had become so involved by his extravagance that it was placed in the hands of trustees for the benefit of his creditors, an annual allowance of £1,200 being made to him; and early in 1724, having for several months previous edited a semi-weekly political paper called the "True Briton," he left England for ever, and went to Vienna, where he attracted much attention. Repairing thence to Madrid, he treated with contempt an order under the privy seal summoning him home; and in 1726, immediately upon the death of his wife, whom he had always neglected, he was married to Miss O'Byrne, the daughter of an Irish colonel in the Spanish service. He soon made no secret of his adherence to the pretender, from whom he accepted the order of the garter; and at the siege of Gibraltar in 1727 he openly appeared in arms among the enemies of his country, acting as aide-de-camp to the count of Torres. The king of Spain rewarded him with the colonelcy of an Irish regiment in the Spanish service, but in England he was attainted for high treason and dispossessed of the remnant of his property. The remainder of his life was passed in wandering from place to place as caprice or necessity impelled him, his means of support being chiefly derived from the contributions of his friends. He died at a little village in Catalonia, whither he had gone with the hope of recovering his health by the use of a mineral spring, from which he had previously derived benefit; and being utterly destitute, he was buried by the charity of the monks of a neighboring convent. His duchess survived him nearly half a century, dying in London in 1777. His character has been drawn by Pope in the lines in the "Moral Essays" commencing: "Wharton, the scorn and wonder of our days," in which he is held up as an example of the evil effects of indulging the "lust of praise," which was his ruling passion. In 1732 appeared the "Life and Writings of Philip, late Duke of Wharton" (2 vols. 8vo.), containing his "True Briton" papers and speech in defence of Atterbury; and there is another publication in 2 vols. 8vo., purporting to contain the poetical works of himself and his friends. He was a warm patron of the poet Young, who dedicated to him his tragedy, "The Revenge."

WHATCOM, a N. W. co. of Washington territory, bordering on the British possessions and on the gulf of Georgia, bounded S. by the Taxpam river, and drained by Skaget and Spanish rivers; area, about 800 sq. m.; pop. in 1860, 352. Mt. Baker lies on the E. border, and the

W. coast is indented by Bellingham bay, near which is Lake Whatcom. The surface is generally undulating or hilly and the soil fertile. Capital, Whatcom.

WHATELY, Richard, D.D., LL.D., an English prelate and author, born in London in 1787. He was graduated at Oriel college, Oxford, in 1808; in 1810 gained the university prize for an English essay; in 1811 became fellow of Oriel; in 1822 was appointed Bampton lecturer at Oxford, and the same year became rector of Halesworth in Suffolk; in 1825 was chosen principal of St. Alban's hall, Oxford; in 1830 was appointed professor of political economy at Oxford; and in 1831 was consecrated archbishop of Dublin and bishop of Glendalagh, and since 1846 he has also held the bishopric of Kildare. From the commencement of his residence in Ireland he has taken an active part in establishing the "national system of education" in that country, and materially assisted Lord Stanley (now Earl Derby) in perfecting the measures for it. He resigned his connection with the board of Irish education in 1853. In theology he is identified with the low church or liberal party. The following are the titles of his most important works: "The Christian's Duty with respect to the Established Government and the Laws" (London, 1821); "Historic Doubts relative to Napoleon Bonaparte" (Oxford, 1821); "The Bampton Lectures for 1822, on the Use and Abuse of Party Feeling in Religion" (1822); "Essays on some of the Peculiarities of the Christian Religion" (1825); "Elements of Logic" (1826); "Elements of Rhetoric" (1828); "Essays on some of the Difficulties in the Writings of St. Paul," &c. (1828); "Errors of Romanism" (1830); "Introductory Lectures to Political Economy" (1831); "Essay on the Omission of Creeds, Liturgies, &c., in the New Testament" (1831); "Thoughts on Secondary Punishment" (Dublin, 1832); "Sermons on various Subjects" (Oxford, 1835); "Essays on some of the Dangers of Christian Faith which may arise from the Teaching or Conduct of its Professors" (1839); "The Kingdom of Christ Delineated" (1841); "Thoughts on the proposed Evangelical Alliance" (1846); "Introductory Lectures on the Study of St. Paul's Epistles" (1849); "English Synonymes" (1851); "Thoughts on the New Dogma of the Church of Rome" (1855); "Scripture Revelations as to Good and Evil Angels" (1855); "Scripture Revelations as to a Future State" (1856); and "Bacon's Essays, with Notes" (1856).

WHEAT (*triticum*, Linn.), the usual name of a genus of plants belonging to the natural order of *graminaceæ* or grasses, and to that group known as the *cerealia*. The genus is characterized by solitary spikelets parallel with the zigzag stem (*rachis*) which supports them; the glumes 2, many-flowered, carinate acute and mucronate; the paleæ 2, lanceolate, the outer acuminate, the inner bifid at the extremity. The species are numerous, many being weeds and difficult of extirpation; those yielding edible seeds constitute a group by themselves, the rest, which are known as the *agropyra*, being merely grasses. The original country of the common wheat (*T. vulgare*) is uncertain; but its cultivation has been the employment of men from the remotest antiquity, being found connected with ancient history both sacred and profane, and ever accompanying the human race in its most advanced condition of civilization. No other cereal has been discovered possessing so many qualities combined to render it suitable and salubrious for food. Many varieties of wheat are described in agricultural works, each supposed to possess some superiority as suited to different climates and soils; the most prominent of them may be distinguished by the manner in which the seeds or grains are borne on the spike. Structurally considered, the grain of wheat is its fruit (*caryopsis*), consisting of an indehiscent, membranous, one-seeded pericarp, which adheres firmly to the integument of the seed. The pericarp when young and tender is the ovary of the flower, and is borne in the interior or bosom of the surrounding scales of the floral organs, which are arranged in terminal spikes or ears, and which usually are made up of several smaller spikes or spikelets. The variety in which the spikes are several in number and closely appressed, making a compound ear, the lateral ones being shorter, is known as the Egyptian, being common in Egypt; but this form is produced only by a luxuriance of growth, and is not uncommon to the rich soils of California. The most meagre ears are seen in the variety known as the *spelta*, in which the spikes are very narrow and elongated, and the chaff destitute of awns; it grows on very inferior soils. A third variety is similar, having but a single seed in each spikelet, and described as the single-seeded or *T. monococcum;* its culture is limited. A fourth variety has full spikes, the chaff furnished with long awns, the seed hard, and is known as the Polish. The common bearded wheat has a turgid grain, and is the *T. turgidum* of botanists; it is sometimes destitute of the awn, that appendage depending on the soil or else on cultivation, and serving little purpose in detecting varieties; the stalk or straw is said to be used in Italy exclusively in the manufacture of Leghorn hats. There are likewise other minor distinctions, such as the hardness or softness of the grains; the former quality is found in varieties raised in warmer climates, and is perhaps due to better ripening; the seeds of such are more compact, semitranslucent, and filled with very white flour. The spring and winter wheats are likewise no more than different conditions of the same species, producing each other by proper treatment in the times of sowing; and varieties indicated by the color of the chaff or of the seeds are traceable to differences of soil, or perhaps to circumstances of a chemical nature, like the variations of color in the husks, cob, and grains of

Indian corn.—The soil best suited to wheat seems to be one of an argillaceous character, but not too stiff, and rich in alkalies and salts. Light, spongy, and porous soils, whether silicious or calcareous, are the least suitable; and those abounding in a variety of constituents, such as the alluvial, are perhaps the most preferable. The usual yield in the older states of the Union is from 10 to 30 bushels to the acre. Much depends on the selection of seed of choice and suitable kinds, on its preparation previous to sowing, and on the comparative freedom which sorts may possess from any tendency to destructive fungi which attack the straw or injure the ears and grain. Great loss is sometimes experienced from the attacks of insects upon the growing crops or the gathered grain. (See Hessian Fly, Weevil, Wheat Fly, and Wheat Moth.)—The production of wheat in the United States has made rapid progress within the past 10 or 12 years. In 1850 the whole product was 100,485,800 bushels; in 1860, 171,183,500 bushels. In the amount raised Ohio took the lead in 1840, Pennsylvania in 1850, and Illinois in 1860. The following table shows the chief wheat-growing states, and their relative rank in 1850 and 1860:

States.	1840.	1850.	1860.
Illinois	3,335,400	9,414,600	24,159,500
Indiana	4,049,400	6,214,400	15,219,100
Wisconsin	212,100	4,286,100	15,812,600
Ohio	16,571,600	14,487,300	14,532,600
Virginia	10,109,700	11,212,600	13,129,100
Pennsylvania	13,213,000	15,367,700	13,045,200
New York	12,286,400	13,121,500	8,681,100
Michigan	2,157,100	4,925,800	8,313,200
Iowa	151,700	1,530,500	8,433,200
Kentucky	4,803,100	2,142,800	7,394,800
Maryland	3,345,700	4,494,600	6,103,500
California	....	17,200	5,946,600
Tennessee	4,569,700	1,619,400	5,409,900
Total 13 states	74,804,900	88,834,500	146,180,400
All others	13,708,300	11,651,300	25,003,100
Total in United States	88,513,200	100,485,800	171,183,500

The number of bushels raised per head of the inhabitants in 1840 was 5.12; in 1850, 4.33; in 1860, 5.44. The value of wheat flour manufactured in 1850 was $136,056,736, and in 1860, $220,952,000. The exports of wheat and wheat flour to Great Britain and France in 1857 were 14,570,331 bushels of wheat, and 3,712,053 barrels of flour; the next year they fell off to 8,926,196 bushels and 3,512,169 barrels, and in 1859 to 3,002,016 bushels and 2,431,828 barrels. In 1860 they were 4,155,153 bushels and 2,611,596 barrels, and in 1861 they suddenly rose, in consequence of the shortness of the crop in Great Britian and France, to 36,781,240 bushels and 5,181,230 barrels, nearly double the export of any previous year. The value of these exports in these 5 years was as follows: 1857, $55,624,000; 1858, $33,698,000; 1859, $24,893,000; 1860, $27,590,000; 1861, $94,866,000. The wheat-exporting countries of the eastern continent are Russia, whose southern governments produce immense quantities, known in commerce as Odessa or Black sea wheat; Turkey, which in some years produces a considerable surplus; and northern Africa, which for many centuries was the granary of the world. France and Great Britian formerly produced a surplus, but now do not raise quite sufficient for their own consumption even in favorable years, though during the years 1858, 1859, and 1860 France for the first time in 15 years exported considerable quantities of grain. In the interior of Asia wheat is largely produced.

WHEAT FLY, the name given in Europe to the *cecidomyia tritici* (Kirby), a small dipterous insect of the family of gall gnats, from its depredations on wheat, to which it is nearly as destructive as the famous and closely allied species, the Hessian fly. The perfect insect is $\frac{1}{10}$ of an inch long, of an orange red color, with whitish wings hairy on the edges, and black eyes; the females deposit their eggs in the centre of the corolla of the wheat flower, coming out in great numbers between 7 and 9 P. M., early in June, several laying on the same ear; the eggs are hatched in 8 to 10 days, and the larvæ, footless grubs nearly $\frac{1}{8}$ of an inch long when fully grown, feed upon the flower, rendering it abortive, and not upon the stem like the Hessian fly; they are yellowish, with sharp head and truncated tail, and have a quick wriggling motion; they quit the ears by the first of August, descend about half an inch into the earth, and there remain through the winter; the pupa is narrower, rufous, and sharp at both ends. An insect, considered by Harris the same, appeared in northern New England about 1828, whence it has spread to Canada, Massachusetts, and New York, sometimes destroying one tenth of the crops of wheat and other grains, and disappearing only by being starved out by a change of crop or the substitution of late sown spring wheat. (See Harris, "On the Insects injurious to Vegetation," 3d ed., 1862.) The most efficacious remedies have been found to be: fumigations with sulphur for several evenings in succession while the grain is in blossom; lime and ashes strewn over them when wet with dew; liming and ploughing the soil into which they have burrowed; and sowing late in spring or early in autumn. A little black ichneumon fly deposits her eggs within these larvæ, and thus destroys a great number.

WHEAT MOTH. There are two kinds of moths which do serious injury to grain crops, not only in America, but also in Europe, where they both originated; one is the *tinea granella*, frequently called corn moth, and the other the *butalis* or *gelechia cerealella*, which has received the name of Angoumois grain moth, from the district in France where its ravages first proved extensive. The first is a minute insect, closely allied to the common clothes moth, belonging to the same family *tineadæ*. The caterpillar which does the injury attacks stored grain and not the growing wheat; it is a small, soft, pale buff, cylindrical worm, with a dark head and dark spot behind the head, and is scarcely half an inch in length when fully grown; these caterpillars pass from one grain to another, gnawing large holes in them, and spinning little threads of silk wherever they go, so that grain much infested by them will frequently be entirely entangled in webs, and even covered so completely with them as to be wholly concealed from view; when it has completed its growth the caterpillar retires to some cranny, where it spins a cocoon made of grains of wood mingled with silk, much of the size and shape of the wheat grains, and, emerging as a moth in the succeeding summer, lays its eggs for another brood. The moth has very much the appearance of the clothes moth, except in its markings; the wings are very long and narrow, and heavily fringed, spreading but little more than half an inch; the upper wings are of a pale buff color mottled with dark brown, and the under wings uniform pale brownish.—The Angoumois grain moth belongs to the family *yponomeutadæ*, and is even smaller than the preceding; yet so abundantly does it propagate itself, notwithstanding its minute size, and the fact that one individual destroys but a single grain, that in France whole provinces have been threatened with famine by the almost total destruction of their crops of barley and wheat; and two distinguished members of the academy of sciences of Paris were once especially deputed to make an examination of the infested district to see how the evil might be obviated. The upper wings are of a pale cinnamon brown color, having the lustre of satin; under wings of a leaden color, and very broadly fringed. About 75 eggs are laid by a single insect, spread about in groups upon 3 or 4 different grains; in a few days the caterpillars are hatched, and the work of destruction commences; each seeks a grain of wheat, into which it burrows, closing up the minute entrance; a single grain affords just sufficient nutriment to last the caterpillar during its life; at maturity it is only about ⅕ of an inch long, very smooth and quite white, with its head only a little brown; it partitions off at one side of its abode the loose particles of rejected material by a thin web, and then eats a hole through the shell, leaving only so thin a pellicle as the escaping moth may break through, after which it changes within the grain to a smooth chrysalis, blunt at either end. There are two broods at least of the moth, one appearing in the autumn, and laying eggs to produce the caterpillars which live in the hearts of the grain during the winter, the other appearing as moths in the late spring, whose progeny require but a short time for their maturity. This diversity in their habits of life during successive broods renders them much more difficult of extermination than they otherwise could be.—The best mode of checking the ravages of both species appears to be by kiln-drying the grain which has been attacked. Good ventilation from beneath through the stored grain has proved beneficial, as also the early threshing and winnowing of the wheat.

WHEATEAR. See Stone Chat.

WHEATLEY, Phillis, a negro poetess, born in Africa about 1753, died in Boston, Dec. 5, 1794. She was brought to Boston in 1761, was purchased by Mrs. Wheatley, and, exhibiting a fondness for books, was instructed by her mistress and her daughters, and acquired for the time a superior education, reading Latin with facility. At an early age she began to express her thoughts in verse, and some of her poems written at the age of 14 give evidence of poetic ability. At the age of 19 she visited England, where she attracted much attention. A volume of her poems dedicated to the countess of Huntingdon was published there, containing her portrait, and bearing the title, "Poems on various Subjects, Religious and Moral, by Phillis Wheatley, Negro Servant to Mr. John Wheatley of Boston, in New England." After her return from England she published a number of poems, among others an address to Gen. Washington, which he acknowledged in a courteous note. These latter, some of them written the year of her death, have not been collected, though the previously named volume was reprinted in Boston and passed through several editions. The family of Mr. Wheatley being broken up by death soon after her return, she married a negro named Peters, and her last days were spent in extreme want.

WHEATON, Henry, an American jurist and diplomatist, born in Providence, R. I., Nov. 27, 1785, died in Dorchester, Mass., March 11, 1848. He was graduated at Brown university (then Rhode Island college) in 1802, studied law with Nathaniel Searle in Providence, and after being admitted to the bar visited Europe. He resided for some time at Poitiers, where there was a law school, spent 6 months in London, and on his return commenced the practice of law in Providence; but, finding the field there too limited, he removed to New York. Here he connected himself with the "National Advocate," a daily newspaper, in the columns of which he discussed the great questions of violated neutral rights, which had given rise to the existing war with Great Britain. During the same period he was for a short time one of the justices of the marine court. His increasing law practice induced him to close his connection with the newspaper in 1815. In that year he published a "Digest of the Law of Maritime Captures or Prizes," which in reality was an exposition of the law of nations as then administered. This treatise was received with much favor by the legal profession, and many years later Mr. Reddie, an eminent Scottish writer on international law, declared Mr. Wheaton's work on captures to be, "in point of learning and methodical arrangement, very superior to any treatise on this department of the law which had previously appeared in the English language." About this time he also published "An Essay on the Means of maintaining the Commercial and Naval Interests of the United States." In 1816 he became reporter of the decisions of the supreme court of the United States, which office he held until 1827. His reports extend to 12 volumes, and contain, as a German author says, "the golden book of American law." The familiarity of Mr. Wheaton with the languages and literature, and particularly the legal systems, of Europe, enabled him to record the application of every branch of public and municipal law to the diversified objects of international and federal relations, as well as of private rights. The character which he acquired as a reporter was unrivalled. Mr. Lawrence, in his introductory remarks to the author's "Elements of International Law," in speaking of these admirable reports, says Mr. Wheaton "did not confine him self to a summary of the able arguments by which the cases are elucidated, but there is scarcely a proposition on any of the diversified subjects to which the jurisdiction of the court extends, that might give rise to serious doubts in the profession, that is not explained, not merely by a citation of authorities adduced by counsel, but copious notes present the views which the publicists and civilians have taken of the question." During this period Mr. Wheaton was a constant contributor to the "American Quarterly," the "North American Review," and other periodical publications, and delivered several addresses before the literary societies of New York. The anniversary address before the historical society in 1820, upon the "Science of Public or International Law," contains the germ of his great works on the law of nations. In 1821 he was elected a delegate from the city of New York to the convention for forming a new constitution for the state. In 1825 he was associated with Mr. Benjamin F. Butler, afterward attorney-general of the United States, and Mr. John Duer in a commission for revising the statute law of New York. In the following year he published the "Life of William Pinkney," and subsequently wrote an abridgment of it for Sparks's "American Biography." In 1827 he was appointed by President Adams chargé d'affaires to Denmark, being the first regular diplomatic agent from the United States to that country, and resided at Copenhagen until 1835, when he was appointed by President Jackson minister resident to the court of Prussia. Two years later he was made minister plenipotentiary by President Van Buren, which office he retained until 1846. In 1831 appeared his "History of the Northmen, from the Earliest Times to the Conquest of England by William of Normandy" (London and Philadelphia), which was translated into French by M. Guillot and published in Paris (1844), under the eye of the author, and with notes and additions from his pen. At the time of Mr. Wheaton's death, he was engaged upon a new and greatly enlarged edition of this work. The "History of Scandinavia" (1838) was the joint production of Mr. Wheaton and Dr. Crichton, and intended as a sequel to the "History of the Northmen." In 1836 his "Elements of International Law" appeared in England and the United States. In 1841 he wrote a prize essay for the French institute, under the title of *Histoire du droit des gens en Europe, depuis la paix de Westphalie jusqu'au congrès de Vienne.* In 1846 this work, greatly enlarged, appeared in Leipsic and Paris. An English translation under the title of "History of the Law of Nations in Europe and America, from the Earliest Times to the Treaty of Washington," was published in New York in 1845. The object of this work is to trace the progress which the law of nations has made since the treaty of Westphalia, and it may be said to occupy a place never before filled in the literature of the English or any other language. It has ever since its publication been regarded throughout Europe as a standard authority. The 6th and greatly enlarged edition of his "Elements of International Law" was published in Boston in 1855. A 7th edition of the work is in press (1862), under the editorial care of Mr William Beach Lawrence, bringing the subject down to the present time. In 1842 Mr. Wheaton published in Philadelphia "An Inquiry into the British Claim of a Right of Search of American Vessels." In 1843 he was elected a corresponding member of the French institute, and in the following year a foreign member of the royal academy of science of Berlin. He returned to the United States in 1847. A public dinner was given him in New York, and a similar compliment was tendered to him in Philadelphia. His last literary discourse was delivered before the Phi Beta Kappa society of Brown university, Sept. 1, 1847, being an "Essay on the Progress and Prospects of Germany." During the following winter he was to have read a course of lectures on international law before the law institute of Harvard university, and had he lived would have been appointed to a professorship of civil and international law, which was about to be established in that institution. He received the degree of LL.D. from Brown university in 1819, from Hamilton college, N. Y., in 1843, and from Harvard college in 1845.

WHEATSTONE, Charles, an English experimental philosopher, born in Gloucester in 1802. He was engaged from early youth in the manufacture of musical instruments, and for the purpose of perfecting them devoted great attention to the laws of sound and their application to music. From these he was led to investigate those of light, and to make numerous experiments in optics and acoustics, some of which were published in the "Journal of the Royal Institution" and in the "Philosophical Magazine." In 1833 he communicated to the royal society, through Prof. Faraday, a paper on "Acoustic Figures," and the next year his celebrated "Account of some Experiments to measure the Velocity of Electricity and the Duration of Electric Light." He was appointed the same year (1834) professor of experimental philosophy in King's college, London, and in 1836 elected a fellow of the royal society. In June, 1838, he communicated to the society a paper entitled "Contributions to the Physiology of Vision," in which he described and named the stereoscope. In connection with Mr. William Fothergill Cooke, he made such experiments and attained such results in the transmission of intelligence upon copper wires by means of electricity as entitle him to be regarded as one of the inventors of the electric telegraph as a practical reality; and though Morse's invention was undoubtedly of earlier date, there is no reason to suppose that he knew of Morse's discovery at the time (June, 1836) when his own experiments were made public. He was associated with Mr. Cooke in the first telegraph patent in England. The electro-magnetic alarum was also invented by him, as well as several instruments for registering by means of electro-magnetism the indications of the thermometer, barometer, &c., transit observations in astronomy, and extremely short intervals of time. He has twice received the royal society's medal for his discoveries. In 1855 he received from the emperor Napoleon III. the decoration of a chevalier of the legion of honor "for his application of the electric telegraph." In 1838 he published a volume of "Experimental Researches."

WHEDON, Daniel Denison, D.D., an American clergyman, born in Onondaga, N. Y., March 20, 1808. He was graduated at Hamilton college, N. Y., in 1828, and studied law in the office of Judge Chapin of Rochester. In 1831 he was appointed tutor in Hamilton college, and in 1832 elected professor of ancient languages and literature in the Wesleyan university, Middletown, Conn., which office he held till 1843. In 1836 he was ordained as a minister of the Methodist Episcopal church. In 1845 he was elected professor of rhetoric, logic, and history in the university of Michigan, which post he filled for 8 years; and in 1856 he was elected by the general conference of the Methodist Episcopal church editor of the "Methodist Quarterly Review" and general editor of the publications of the Methodist book concern, and in 1860 reëlected. Beside numerous articles in the "Methodist Quarterly," "Bibliotheca Sacra," and other religious reviews and periodicals, Dr. Whedon has published a volume of "Public Addresses, Collegiate and Popular," and a "Commentary on the Gospels" (1859).

WHEEL, a solid piece or frame, consisting of wood, or of iron or other metal, and usually of circular form, fixed to or movable upon a solid axis, about the centre line of which in either case it is intended to turn. The solid axis, when the wheel moves freely upon it, is commonly called an axle; when the wheel is fixed to and turns with it, an arbor or shaft. The true or mathematical axis is always the fixed line about which the revolution of the wheel occurs. This line, or a point in it, is also called the centre of the wheel. When, as is ordinarily the case, this centre of motion coincides with the centre of form, we have a centred wheel; in case the centre of motion is to one side of the centre of form, an eccentric wheel. Both these sorts of wheels are circular; but for peculiar purposes, wheels which are elliptical, or of a variety of curved outlines, are employed. The simplest form of wheel that can be used is a plain disk sawn from the trunk of a tree; this is still sometimes employed by the pioneers in newly settled tracts of country, and by agriculturists generally in some countries, as Chili. Solid wooden wheels are now but seldom used in machinery; more commonly, especially when of large size, wooden wheels have their periphery made in segments, and joined by spokes or stays either to a nave or hub upon the axle or directly to the shaft, according as they are movable or fixed. For wheels of ordinary or heavy machinery, cast iron has almost wholly superseded wood. In machinery, there are four general modes of connection of one turning or moving piece with another, for the transmission of motion and power: 1, by rolling contact, or frictional connection, where the surface of one wheel or cylinder rolls directly upon and moves another; 2, by sliding contact, as in the case of turning a wheel by the thread of an endless screw, or other applications of screws, cams, and eccentric wheels (the action of ordinary toothed wheels is intermediate to these two, or partakes both of a rolling and a sliding movement); 3, by wrapping connectors, as belts, bands, chains, &c., passing about pairs of wheels, and transmitting motion from one to the other; 4, by links, or link-work, such as a rod passing from a treadle to a crank, the connecting rod of a steam engine, &c. In the first three of these modes, wheels or their equivalents are most commonly employed. Belt or band wheels are almost universally circular and of the simplest form; a change of direction of the movement, when required, being secured by introducing one or more small wheels called pulleys, the axes of which are so fixed as to change the course of the band caused to move over them. Either in case of rolling contact or of toothed wheels, the pairs of axes are more commonly parallel with each other, and with the direction of the surfaces in contact; but by making the contact surfaces of two such wheels conical or bevelling, at the required angles, the direction of movement is changed at will, so that the axes stand at right angles, or at any required angle, with each other. Disk or face wheels are those which transmit motion to another wheel by contact at one of their flat sides, and not at the periphery. Connection of wheels by teeth is called gearing; the more common form is outside gearing; when the teeth of a larger wheel point toward the axis and engage with those of a less wheel within, the arrangement is inside gearing. Teeth set in mortises, and commonly wooden, are called cogs; when, in place of teeth, two disks are fixed upon the shaft, with pins or rollers extending between them, with which the teeth or cogs of another wheel engage, this arrangement is a trundle or lantern. Pin wheels are those having short round pins, usually upon the side, acting upon a trundle or toothed wheel. Wheels with teeth, properly so called, are mainly of two kinds: spur wheels, in which the teeth at the periphery point from the centre; and crown wheels, in which they are on the side, and point parallel with the axis of motion. In contact by rolling, or by spur or crown wheels, the two shafts so connected must turn in opposite directions; and to secure a common direction a third wheel must be interposed. In case of band wheels, or of inside gearing (by use of an annular wheel), the revolution of the two axes is in a common direction. When two successive wheels are of unequal size, the larger is named the wheel, the smaller the pinion; and the former is said to have teeth, the latter leaves. When of any pair of wheels the axes are so placed that the teeth engage, the wheels are said to be "in gear;" when, as is usually allowed by shifting one axis slightly out of place, the connection is broken, the wheels are "out of gear." By a train of wheels, or of wheel-work, are usually meant more than two wheels through which motion is successively transmitted. Evidently, the teeth upon two wheels or a wheel and pinion intended to engage, must be of like size and of corresponding form. The cutting and forming of the teeth, so as to secure continued rolling and action, with the least practicable jar, needless friction, and wear, is a consideration of much importance, and to which much study has been given. Two general forms have been found best to satisfy these conditions: 1, that in which the general outline of the teeth is that of epicycloids, or hypocycloids; 2, that in which they have the form of involutes of a circle. For the manner of determining these curves in practice for teeth of wheels having various sizes, and the use of the odontograph, by aid of which the curves are described, as well as for specific information respecting wheel-work and the variety of other connections in machinery which cannot here be detailed, the reader is referred to Willis's "Principles of Mechanism," Buchanan's "Practical Essays on Mill Work and other Machinery," Mosely's "Mechanical Principles of Engineering," &c. (New York, 1856), Rankine's "Applied Mechanics," and other similar works.—The teeth of two wheels or of a wheel and pinion working together being of like size, it follows that the velocity of the second wheel, or "follower," in any couple, will be to that of the first, or "driver," in the inverse ratio of their respective numbers of teeth; as, if the wheel have 60 teeth and the pinion 15, the pinion must make 4 revolutions to one of the wheel; and so of the reverse. But this ratio of the numbers of teeth being also the ratio of the circumferences, it follows that the velocity of any follower as compared with that of its driver, in toothed, as also in band and rolling contact wheels, can always be expressed by the inverse ratio of the circumferences, or of the diameters, or of the radii, according to convenience. Hence, also, to find the comparison of the velocity of the last wheel in any train with that of the first, it is only necessary to find the inverse ratios of the couples of wheels successively throughout the train, and multiply these; their product will be the ratio sought. When it is desired to regulate the transmitted velocity at will, the most common method is by use of speed-cones—two cones with axes parallel, but tapering in opposite directions, so that a band passing about them can be so shifted as to cause the motion of the follower to be greater or less than or equal to that of the driver, according as the band is at one or other end, or the middle, of the cones; or by use of speed-pulleys—a succession of wheels of varying size on one axis, and of pinions of sizes varying in the reverse direction on another, so that by shifting the band to different couples, similar variations of velocity, differing by definite removes, can be secured. For the fly wheel and eccentric, see Steam Engine (II.). The action of a cam or lifter is similar to that of an eccentric wheel; in fact, it is an eccentric with an irregular outline, in form of one or more waves, so that during a whole or partial revolution it imparts a throw or forward movement once or oftener to any piece against a pin or shoulder on which the waves act. Friction wheels, or friction rollers, are two or more small wheels or cylinders introduced in such positions as to receive on their peripheries the friction of a turning axle or journal, thus reducing the resistance that would occur mainly in the lowest part of a fixed journal box, by transferring the bearing surfaces and converting the friction from the sliding to the rolling form (see Friction), and diminishing wear by distributing the pressure over a larger number of bearing surfaces. A ratchet wheel is a small wheel intended to traverse the length of a straight rack furnished with corresponding teeth, or turning about an axis fixed in position, and used to move a straight piece back and forth or up and down, the wheel being turned in either case by a hand winch. Of the former arrangement, application is made in the shifting of a movable carriage or other part of mechanism along a horizontal base or support; and of the latter, in a common form of counter pump for liquids, sometimes in air pumps, &c.—Wheels of carriages and of vehicles generally, are those the construction of which (save in the case of the finest mechanism) calls for the greatest study and ingenuity; since they are exposed to strains greater for their size and weight, and in more various directions, than are any others. To bear without fracture the concussions to which they are subject, they require to be exceedingly strong, and somewhat elastic. Ordinary carriage wheels consist of a cylindrical block at the middle, the nave, turning on an axle, and having spokes in the direction of radii, which unite the nave with the wooden circular segments or fellies constituting the rim, and which are enclosed and held together by a wrought iron tire. The tire, being made slightly small for the rim, is expanded by heating to redness, and in this condition is driven upon the rim and bolted to it; the contraction of the metal in cooling results in binding the fellies very firmly to one another and upon the spokes. Carriage or wagon wheels may be made flat; but they are most commonly "dishing" from the nave outward to the rim, for the double purpose of securing width of base to the vehicle, so as to lessen the danger of overturning, and of enabling the wheel better to resist lateral shocks. Obstacles in the way of a carriage wheel, or the natural inequalities of the road, tend to resist its progress; but owing to the rigid connection of the parts of the wheel, and the fact that the pull of the team is exerted at the axle, the arrangement constitutes in case of obstruction a bent lever, one arm of which is vertical from the axle to the level of the obstruction, the other horizontal joining this vertical and the point of the obstruction that meets the wheel at the moment; hence, unless the obstacle is extremely large, it is always on the shorter arm of the lever, and in reference to such the wheel itself thus supplies a perpetual mechanical advantage. This advantage is also greater as the wheel is made larger, unless the line of draught is brought to a level with the traces of the team; and carried above this, one component of the pull of the team would be exerted against the road, and the resistance in every way increased. But if the application of the force of the team be at a point sufficiently below the axle, very large wheels can be employed; and such are used for transporting the heaviest columns, castings, or other burdens, these being commonly slung up beneath an elevated reach or frame; a gain in moving such loads being also secured by a considerable width of the tires. Such wheels more easily surmount obstacles, elevating the load also less abruptly in so doing, while their width serves to bridge over slight depressions and to save the resistance that would be due to sinking into them. M. A. Morin found, as the result of many experiments, the ratio of the resistance to be overcome by the team to the whole load, with various styles of heavy-loaded wagons, to vary from $\frac{1}{21}$ on a wet road with ruts, to $\frac{1}{51}$ on a solid, dry road of hard gravel; the friction at the axles being, of course, reduced by use of the best lubricants. Generally, it may be stated that the ratio of draught to load on well macadamized roads in good order will be $\frac{1}{35}$ to $\frac{1}{40}$; on fresh gravelled roads, often as great as $\frac{1}{16}$; on gravelled roads beaten hard, $\frac{1}{35}$; and on the best paved or hard earth roads, about $\frac{1}{70}$. Of the most important of Morin's results the following is a brief summary: 1, the resistance to wagons on solid metalled roads or pavements, taken with reference to the axle, and in a direction parallel to the ground, is sensibly proportional to the pressure or total weight of vehicle and load, and inversely proportional to the diameter of the wheels; 2, on such roads, the resistance is very nearly independent of the width of the tires; 3, upon compressible bottoms, such as earths, sands, gravel, &c., the resistance decreases with increased width of tire; 4, upon soft earths, such as loam or sand, the resistance is independent of the velocity; 5, upon metalled roads and upon pavements, the resistance increases with the velocity, but the resistance is less as the wagon is better hung (with good springs) and the road more smooth; 6, the inclination of the line of draught—the direction in which the pull of the team takes effect—should approach the horizontal for all roads, and for common wagons so far as the construction will admit. These results or laws are to be regarded as approximations, and as, practically, varied with the conditions. It is usual not to bring the line of draught nearer than by about 15° to the horizontal.—For more particular discussion of the resistance opposed to vehicles, and the destructive effect of the latter on roads, see the chapter on "Draught of Vehicles," in Morin's "Fundamental Ideas of Mechanics, and Experimental Data" (New York, 1860). For the subject of car wheels, see RAILROAD.

WHEELING, a city and port of entry of Ohio co., Va., situated on the E. bank of the Ohio river and on both sides of Wheeling creek, 40 m. in a direct line and 92 m. by the river below Pittsburg, 350 m. N. W. from Richmond, and 365 m. by the river from Cincinnati; pop. in 1860, 14,570. The site of the city is a narrow alluvial tract lying between the river and a range of precipitous hills, and extending about 3 m. along the river bank. Wheeling is the largest town on the Ohio between Pittsburg and Cincinnati. It is the terminus of the Baltimore and Ohio railroad, and of the river division of the Cleveland and Pittsburg railroad. The national road crosses the river at Zane's island in front of the city, on a wire suspension bridge having a span of 1,010 feet. The hills in the vicinity contain an inexhaustible supply of coal, the cost of which on the spot does not exceed 2 cts. per bushel. In July, 1862, 55 steamboats, of 5,443 tons, were owned here, and 8 steamboats were built in the previous year. Wheeling has 8 iron founderies, 3 nail mills, 2 railroad and 2 bar iron mills, 3 steam engine manufactories, 4 glass houses, 5 paper mills, 4 flouring mills, 7 breweries, 5 tanneries, &c.; 2 banks with a capital of $1,250,000, 5 savings banks, 2 daily newspapers, 21 churches, and numerous public and private schools and academies.—Wheeling was incorporated as a city in 1836. It became the capital of the county in 1797, and is now (1862) the seat of the state government established by the western portion of Virginia in 1861.

WHEELOCK, Eleazar, D.D., an American clergyman, the founder and first president of Dartmouth college, born in Windham, Conn., in April, 1711, died in Hanover, N. H., April 24, 1779. He was graduated at Yale college in 1733, and in 1735 was settled as pastor of the 2d Congregational society in Lebanon, near Columbia, Conn., which office he held for 35 years. His salary being small and irregularly paid, he opened a school, and the proficiency of one of his pupils, an Indian boy named Samson Occom, led to his establishing an Indian missionary school, out of which grew eventually Dartmouth College. (See Dartmouth College, and Occom, Samson.) He removed to Hanover in 1770, and presided over his new college 9 years. He published a "Narrative of the Indian School" in 1762, and several continuations of it up to 1773. His memoir, with selections from his correspondence, appeared in 1811.—John, LL.D., second president of Dartmouth college, son of the preceding, born in Lebanon, Conn., Jan. 28, 1754, died April 4, 1817. He entered Yale college in 1767, but on the removal of his father to Hanover became a member of the new college, was graduated with the first class in 1771, and was a tutor there from 1772 to 1776. In 1775 he was elected a member of the colonial assembly, and in 1777 was appointed a major in the New York forces, and soon after lieutenant-colonel in the continental army. In 1778 he was selected by Gen. Stark to lead an expedition against the Indians, and within a year was called to a position on Gen. Gates's staff, in which he remained till the death of his father, when he was elected his successor as president of the college, though only 25 years of age. In 1782 the trustees sent him to Europe to procure books, money, &c., for the institution. On his return the vessel in which he had embarked was wrecked off Cape Cod, and the money, books, and papers lost. He continued in the presidency 36 years, till, in consequence of some ecclesiastical controversy among the trustees, he was removed in 1815, a measure which excited very general indignation, and nearly caused the ruin of the college. In 1817 a new board of trustees was elected, who restored him to office, but his death occurred a few weeks after. He bequeathed half his large estate to Princeton theological seminary. He published "Sketches of the History of Dartmouth college" (1816).

WHEELWRIGHT, John, an American clergyman, born in Lincolnshire, England, in 1594, died in Salisbury, N. H., Nov. 15, 1679. He was a graduate of Cambridge, and a classmate of Oliver Cromwell, and for some years a clergyman of the established church at Alford, near Boston, Lincolnshire; but in 1636, being driven from his church by Archbishop Laud, he emigrated to Boston in New England, where the same year he was chosen pastor of a branch of the Boston church, in what is now Braintree. The celebrated Mrs. Anne Hutchinson was his sister-in-law, and he partook of her views. Differences of opinion led to personal animosities between him and Mr. Wilson, the pastor of the Boston church; and the general court in its session of 1636–'7 appointed a fast, partly to heal these dissensions. On this occasion Mr. Wheelwright preached in Boston, and, as his enemies asserted (though the manuscript of the sermon, still in existence, does not justify the assertion), denounced the ministers and magistrates. The general court pronounced him guilty of sedition and contempt, for which, after some months' delay, he was banished with his friends from the colony. In 1638 he formed a settlement on the banks of the Piscataqua, which he called Exeter. After a residence of 5 years here, the town was declared to be within the limits of Massachusetts, and he removed with a part of his church to Wells in the district of Maine. In 1644 a reconciliation took place between him and the colonial government of Massachusetts, in consequence of some acknowledgments on his part, and he returned to that colony in 1646, and settled in Hampton, where he remained 8 years. In 1654 he published his "Vindication." About 1657 he went to England, where Cromwell received him cordially; but he returned in 1660, and settled as pastor in Salisbury, N. H.

WHELK, a marine, univalve, gasteropod shell, of the genus *buccinum* (Linn.). There are about 20 living species, and more than 100 fossil in the miocene formations. The shell is ovate-conic, the aperture having a notch without a canal, and the pillar not flattened and somewhat twisted. The common whelk or buckie (*B. undatum*, Linn.) is the largest, being about 3 inches long, grayish or brownish white, with numerous raised lines and striæ; it is very common on the coasts of Great Britain, where it is dredged as an article of food, its supply to the London market being a considerable branch of trade; it is found from low water mark to a depth of 100 fathoms, and is distributed through the Irish, North, and Arctic seas, along the American shore from Cape Cod to Greenland, and across to the Siberian and Okhotsk seas; it is found fossil in the newer pliocene of Sicily, though not now living in the Mediterranean. The most common species on the Atlantic coast of America is the *B. obsoletum* (Adams), ovate, reddish or olive brown, with a network of lines, aperture dark violet, with 6 whorls and apex generally eroded; it is about 1 inch long and $\frac{1}{2}$ inch wide; the animal is mottled with slate color. Its movements are very active, and its food consists of dead crabs, fish, &c., rendering it a very good scavenger in aquarial tanks; it occurs all along the Atlantic coast, preferring muddy, still inlets, flats uncovered at low tide, and the mouths of rivers where the water is brackish; the old shells are of a dark green, almost blackish color, from a marine vegetation which grows upon them. The *B. trivittatum* (Adams) is also abundant on our coast, especially about Nantucket, and is often found worn on the beaches; it is smaller than the last, more conical, greenish white, sometimes with three dark bands on the lower whorl, whence the specific name.

WHEWELL, William, D.D., an English mathematician and philosopher, born in Lancaster, May 24, 1794. He is the son of a joiner, and was destined by his father for that trade, but at the grammar school of his native town manifested abilities so superior that he was sent to Trinity college, Cambridge. Here he distinguished himself by his mathematical attainments, was graduated in 1816, obtained a fellowship, and for several years acted as tutor. He was chosen professor of mineralogy in 1828, and held that office until 1832. In 1838 he was elected professor of moral theology or casuistry, in 1841 became master of Trinity college, and in 1855 vice-chancellor of the university of Cambridge, when he gave up his professorship, though still retaining the mastership. By his lectures and writings Dr. Whewell has effected a radical reform in regard to the study of the physical sciences in England. His first publications were generally mathematical works designed for the use of students of the university, and consist of "Mechanics" (2 vols.), a "Treatise on Conic Sections," "Mechanics of Engineering," and an edition of Newton's *Principia.* His most important works relating to other sciences are: "Astronomy and General Physics considered with reference to Natural Theology; being the Third Bridgewater Treatise" (London, 1833); "History of the Inductive Sciences from the Earliest to the Present Times" (3 vols., 1837; 3d edition, enlarged, 1857); and "The Philosophy of the Inductive Sciences, founded upon their History" (2 vols., 1840). The last was remodelled and enlarged in 1858–'61, and published as the "History of Scientific Ideas" (2 vols.), "Novum Organon Renovatum" (1 vol.), and "Philosophy of Discovery" (1 vol.). While occupying the chair of philosophy he published "Elements of Morality, including Polity" (1845); "Lectures on Systematic Morality" (1846); "Lectures on the History of Moral Philosophy in England" (1852); and an edition of the treatise of Grotius *De Jure Belli et Pacis*, with a translation and English notes (1854). In regard to university reform he has also written treatises entitled "On a Liberal Education in general, and with particular reference to the Leading Studies of the University of Cambridge" (1830), and "On the Principles of English University Education" (1838). In Germany, where he travelled during his professorship of mineralogy, he contracted a passionate admiration for the philosophy of Kant, and has also made a version into English hexameters of Goethe's *Hermann und Dorothea*, and a translation of the "Professor's Wife" of Auerbach, and published "Architectural Notes on German Churches." Among his other works are: a reply to "Vestiges of Creation," entitled "Indications of the Creator;" a translation of Plato under the title of "The Platonic Dialogues for English Readers" (3 vols., 1861); and "The Plurality of Worlds," published anonymously, in which he argues that none of the planets except the earth is inhabited. This last book has recently excited a great deal of discussion. He has taken a prominent part in the proceedings of the royal society, of the British association for the advancement of science, and of the geological society; and to the "Philosophical Transactions" he has contributed, among others, a valuable series of papers on tides.

WHICHCOTE, Benjamin, D.D., an English clergyman, born in Stoke, Shropshire, March 11, 1610, died in Cambridge in May, 1683. He was educated at Emmanuel college, Cambridge, took holy orders in 1636, and was appointed one of the university preachers. In 1643 he was presented by his college to the living of North Cadbury, Somersetshire, and the next year appointed provost of King's college, Cambridge, from which office he was removed at the restoration. He was minister of St. Anne's, Blackfriars, when that church was destroyed in the great fire of 1666, and then obtained the vicarage of St. Lawrence, Jewry. He was regarded as one of the founders of the latitudinarian school of divines. His works, which were all published posthumously, had a considerable circulation in the early part and middle of the 18th century. They consist of 5 volumes of sermons (1698–1707), "Observations and Apophthegms" (1688), and a volume of "Moral and Religious Aphorisms" (1703).

WHIG, the designation of a political party in English and more lately in American history, originally applied to the former as a term of reproach, but, like the name tory, subsequently assumed with pride by the persons to whom it was given. It first came into general use as a party phrase in 1679, and was derived from the word "whiggamore," or shorter "whigg," which in the south-western counties of Scotland denotes a drover. After the defeat of the duke of Hamilton in 1648, a number of the Covenanters from this part of the country were incited by their ministers to march upon Edinburgh. "This," says Burnet, "was called the whiggamores' inroad; and ever after that all that opposed the court came in contempt to be called whiggs; and from Scotland the word was brought into England, where it is now one of our unhappy terms of distinction." The immediate cause of the introduction of this term was the struggle between the court and country parties on the bill of exclusion. The opponents of the bill were called in contempt tories, and whig and tory, though, as Hallam observes, "as senseless as any cant terms that could be devised," immediately became as familiar in use as they have since continued. The distinguishing principles of the whigs are thus generally stated by the author last quoted: "A whig deemed all forms of government subordinate to the public good, and therefore liable to change when they should cease to promote that object. Within those bounds which he, as well as his antagonist, meant not to transgress, and rejecting all unnecessary innovation, the whig had a natural tendency to political improvement, the tory an aversion to it. . . . . This made the privileges of the subject, that the crown's prerogative, his peculiar care. Hence it seemed likely that, through passion and circumstance, the tory might aid in establishing despotism, or the whig in subverting monarchy. The former was generally hostile to the liberty of the press and the freedom of inquiry, especially in religion; the latter their friend. The principle of the one, in short, was amelioration; of the other, conservation." The party has in general adhered to these principles since it first received its distinctive name, though, as is natural, time and circumstances have effected important modifications in its professions and modes of action. Within the last 80 years, a progressive wing of the party has ceased to be designated by the old name, but is now known as the radicals; and in like manner, such has been the general progress of political ideas, much of what was whiggism at the commencement of the last century is now toryism or conservatism, and the whigs of the present day resemble in their general principles only, and not in the immediate objects to be attained, the founders of the party. The whigs came into power in England with the accession of William III., and were in general the dominant party until the middle of the next century; after which the tories predominated for upward of 80 years. The agitation of the reform bill and of Catholic emancipation again brought the whigs into power, but since 1830 the settlement of old disputed issues has made the term practically obsolete as a political definition.—In the United States the term whig was applied during the war of independence to the patriotic party, the adherents to the crown being called tories. The word subsequently disappeared from the political vocabulary of the country until the presidential election which resulted in the return of Gen. Jackson for a second term, when the anti-Jackson or national republican party, as it was called, took the name of whig. The whigs of America having been hopelessly divided by the anti-slavery movements of 1848 and subsequent years, the party ceased to exist as an independent organization in 1854–'5, and its members were absorbed by the democratic party and the newly created republican party. A part had previously joined the American party, or "know-nothings."

WHIMBREL. See Curlew.

WHINCHAT. See Stone Chat.

WHIPPLE, Abraham, a commodore in the American navy during the war of the revolution, born in Providence, R. I., in 1733, died near Marietta, O., May 29, 1819. In early life he was captain of a merchant vessel in the West India trade, and in the old French war he made himself conspicuous while in command of the privateer Game Cock, fitted out in Providence, taking in a single cruise 23 French prizes. In 1772 the encroachments of certain British revenue vessels led to ruptures between their commanders and the people of Rhode Island, culminating in the burning of his majesty's armed schooner Gaspee in the waters of Narraganset bay in June of that year. The party engaged in this affair was secretly organized in Providence, and Capt. Whipple was chosen to command the expedition, consisting of 8 long boats manned with brave and experienced men. Large rewards were offered by Gov. Wanton and by the British government for the discovery of the perpetrators of the act, and a royal commission was sent out to inquire into the affair; but the perpetrators were never discovered. In June, 1775, two armed vessels were fitted out by Rhode Island, of which Whipple was put in command, with the title of commodore. The larger vessel was manned by 80 men, and carried 10 guns. In August they added to this navy two row galleys, carrying 60 men. The design of this measure is somewhat equivocally stated by the general assembly to be "to protect the trade of the colony." On his way down the bay Com. Whipple made a prize of one of the tenders to the British frigate Rose, then off Newport. This was a year before the declaration of independence. From 1775 to 1779 he commanded the schooner Providence, which captured and destroyed more vessels than any other in the service during this period. She was, however, finally taken by the British. He was afterward placed in command of the new frigate Providence. Having entered Narraganset bay, the British naval force completely blockaded it to prevent her egress; she nevertheless succeeded in getting to sea. On this occasion Com. Whipple was bound to France with government despatches, a voyage which he successfully accomplished, evading the British ships sent in pursuit. One of his most daring exploits was performed in 1779, when he encountered the homeward-bound Jamaica fleet of nearly 150 sail, convoyed by a 74-gun ship and several smaller vessels. He concealed his guns, hoisted British colors, and joined the fleet as one of the merchantmen. He thus sailed in their company for several days, and each night made a capture of one vessel, which he manned from his own crew, and despatched homeward, so as to be ere morning out of sight of the fleet. In this way he captured 10 richly laden vessels, 8 of which reached American ports in safety. The following year, when endeavoring with a squadron to save Charleston from capture, he was unsuccessful, lost his squadron, and was held as a prisoner till the end of the war. The large amount of prize money due him he relinquished to the government. In 1784 he commanded the first vessel that displayed the United States flag on the

Thames. On leaving the service he retired to a farm in Cranston, a few miles from Providence, until the formation of the Ohio company, when he removed to Marietta. In 1796 he took up his residence upon a small farm near that town, where he supported himself by the labor of his own hands. For the last 8 years of his life he received a pension from government.

WHIPPLE, Edwin Percy, an American essayist, born in Gloucester, Mass., March 8, 1819. When he was a child his father died, and shortly afterward his mother removed to Salem, where at the age of 15 he became clerk in a bank. At 18 he entered a large banking house in Boston, where he rose to the position of principal clerk. Soon after the completion of the merchants' exchange he was appointed superintendent of the reading room connected with it, and he remained in charge of the room until the beginning of 1860, when he determined to apply himself more exclusively to literary pursuits. In 1840 he delivered a humorous poem before the Boston mercantile library association. In 1843 he contributed a critical essay on the genius and writings of Macaulay to the "Boston Miscellany," which attracted much notice; and in the same year he became a contributor to the "North American Review." He has also written numerous critical essays in "Graham's Magazine," the "American Review," "Harper's Magazine," the "Christian Examiner," the "Methodist Quarterly Review," and the "Atlantic Monthly." In 1848 the degree of A.M. was conferred on him by Harvard college; and in the following year he published a selection from his contributions to periodical literature, under the title of "Essays and Reviews" (2 vols. 12mo.). In 1850 he published a small volume of "Lectures on Subjects connected with Literature and Life," and in the same year he delivered the fourth of July oration before the city authorities of Boston, on "Washington and the Principles of the American Revolution." For the last 10 years he has published but little. In the spring of 1859 he delivered a course of 12 lectures before the Lowell institute in Boston, on "The Literature of the Age of Elizabeth," which have been repeated in whole or in part in several other places.

WHIPPLE, William, an American general, and a signer of the declaration of independence, born in Kittery, Me., in 1730, died Nov. 28, 1785. In his boyhood he was sent to sea in a merchant vessel, and before his 21st year had made several voyages to Europe as captain. In 1759 he relinquished the sea and engaged in mercantile pursuits at Portsmouth, N. H. In Jan. 1775, he represented his district in the provincial congress convened at Exeter, and in the next year was elected to the continental congress. In 1777 he was appointed brigadier-general, commanded the first brigade of New Hampshire troops under Gates, and was in the battles at Stillwater and Saratoga. In 1778 he coöperated with Gen. Sullivan in the siege of Newport. From 1782 till 1784 he was financial receiver for the state of New Hampshire, and in 1782 he was appointed a judge of the superior court of the state.

WHIPPOORWILL, the common name of the *antrostomus vociferus* (Bonap.), a North American species of goatsucker, derived from the fancied resemblance of its notes to the above syllables; for family and generic characters, see Goatsucker. It is 10 inches long and 19 in alar extent; the plumage is very difficult to describe, much resembling that of the European goatsucker; the top of the head is longitudinally streaked with black; the throat has a narrow white collar; the abdomen and terminal half of tail whitish, the former with indistinct transverse bands and mottlings of brown; wings brown, each quill with a series of round rufous spots on both webs; the bristles at the base of the bill are very stiff, more than an inch long, but without lateral filaments; wings short and rounded, 2d quill the longest, and tail rounded; it resembles also the chuck-will's widow (*A. Carolinensis*, Gould), but is much smaller; the female is without the white on the tail. It is distributed over the eastern United States, being replaced on the upper Missouri and to the west by the *A. Nuttalli* (Cassin), smaller, lighter colored, without median stripe or crown, with the white patch on throat larger and the white on tail less; the gape in both is very large. It is seldom seen during the day, unless startled from its repose on or near the ground; the flight is low, swift, zigzag, noiseless, and protracted, as it seeks the moths, beetles, and other insects on which it feeds; according to Audubon, it always sits with its body parallel to, and never across, the branch or fence which supports it. It comes from the south in spring, returning in autumn. The notes are clear and loud, for several hours after sunset, and then unheard till daybreak, when it again becomes vocal until the sun has fairly risen; the first and third syllables are given with great emphasis; 2 or 3 of these birds (and there are often many more together) will make such a noise that those unaccustomed to it are unable to sleep. Though its flesh is good, it is rarely killed, being small and harmless, and beside difficult to shoot from its zigzag flight and nocturnal habit. The eggs are laid about the middle of May on the bare ground or on dry leaves in the thickets which they frequent; they are 2, much rounded, greenish white, with spots and blotches of bluish gray and light brown; both birds incubate, and the young are hatched in 14 days; the young are fed a long time after they can fly. The Indians have a tradition that these birds were not seen till after a great massacre of their race by the English, and that they are the departed spirits of their murdered brethren; they look upon them with superstitious dread, and believe that if they alight on or near a dwelling, some one of the household will soon after die.

WHIP-TOM-KELLY. See Vireo.

WHIRLWIND, a wind distinguished by the circumstance of its consisting in the movement of a body of air of greater or less extent in a circular or spiral course, and one more or less nearly approaching the horizontal of the place at which at any time it may be situated. Any such movement is, of course, to be regarded as occurring about an axis; and the plane or direction in which the whirling motion takes place may be, in different instances, such that the axis shall point for the time or continuously at almost any inclination to the surface of the land or sea, from that nearly horizontal up to a true vertical. The extent and violence of the whirl varies in different cases, from the temporary eddy of a few feet diameter, often marked out and observed by means of an ascending column of dust, straws, or other light objects, and that may appear in a nearly calm day in summer and even upon open fields or plains, to the revolving tempest or cyclone of the breadth of 600 miles. In common usage, the name whirlwind is applied only to a vortical or turning wind of considerable violence, and such as can seldom or never have a diameter of less than 100 yards. Such winds, moreover, are probably never stationary, but advance along the land or sea from the point of their inception in a course either straight or curved, and called their track. Up to the present century, the name was given to all violent winds known to have a whirling movement, whatever their extent. But the observations of Capper in 1801, and the general theory of Professor Dove, since sustained and confirmed by the researches of Redfield, Reed, and others, have established the fact that many of the tempests occurring near to and within the tropics, and which from their great extent appear at any given place and time to be simple or rectilinear winds, consist also of vast bodies of air having a continuous and rapid whirling movement. Accordingly, whirlwinds are now known to be of two entirely distinct classes, presenting unlike characters, and due to the operation of unlike causes. These classes are: 1, cyclones, probably never known except as setting in with or during extensive storms of rain, and of which the diameter seldom or never falls short of 100 miles, while their forward movement is comparatively slow, and their duration from one to several days; 2, tornadoes, properly so called, which often arise quite independently of rain and in a clear sky, though they usually end in producing a violent rain storm, and may accompany one from the first; the breadth of their proper vortex being often less than a mile and never exceeding a few miles, while their advance is usually very rapid, and their duration comparatively brief. It can now scarcely be doubted that in all extensive or violent storms the wind acquires more or less completely a movement of rotation. In cyclones, the axis of this movement must be supposed to become nearly or quite vertical; in whirling winds of small diameter, it may be inclined to the earth at various angles, or as traceable in water spouts or columns of dust, have a tortuous direction.—For the causes concerned in producing winds in general, see Winds. If, within the region of trade winds, a broad tract of air be rapidly lightened, by condensation, with the removal of the moisture in clouds carried away or in rain fall, or by heat, or both these causes, a sheet of air of corresponding breadth will begin to move into the lightened space, first as a direct wind. If this wind, in case of being formed alone, supposing it in the northern hemisphere, would flow in any course from E. or S. of their direction, then, being formed within and relatively to the trade winds, it will conspire with their movement, producing a more rapid westing of the northwardly parts of the body of air so affected, while the slower movement of the trades as they near the equator, and their approach to the direction of the meridian, will cause the new wind to be more resisted toward its southward edge, and the total impulse will be relatively to eastward; the result being the gradual setting in of a revolution of the entire body in the direction opposite to that of the hands of a watch having its face upward. If the new wind come from the west or north, still the eastwardly resultant of its southern portion will be the greater, and the westwardly resultant of its northern; and the revolution will be in the same direction. And if it commence beyond the trade wind region, still the combined influence of the earth's rotation and of the resistances of the stationary bodies of air at the sides of the broad belt of wind supposed first to arise, will suffice to impart the tendency to revolve in the like course. In the southern hemisphere, the direction will of course be reversed. The advance of the centre of such a vortex or whirl, and usually along a curved path, is further determined by the relative force of the winds originating it, and by the continued influence of the earth's rotation. Such is, without doubt, the explanation of the origin of many cyclones, perhaps of all. In a report in 1843, however, Sir J. Herschel suggests that cyclones may sometimes originate in consequence of the crossing at some angle of the crests of two great atmospheric waves (described under Winds), the production of movement in an ellipse or circle by combination of two rectilinear impulses being well understood; but though he finds some of the phenomena in harmony with this theory, there are others that appear to contradict it, as that there are probably in no case two whirls in opposite directions, such as the crossing of two such waves should occasion in the opposite angles made by their intersection. M. Lartigue in 1855, treating of the storms of the Pyrénées, remarks their similarity to certain hurricanes of the American coast, and proposes substantially the same explanation with that of Herschel just given. (See also Cyclone; and for particulars respecting the character and latitudes of these storms, as well as their relations to navigation, see HURRICANE.)—The revolving winds of small circuit and rapid forward movement, and in North America and England most familiarly known as hurricanes or tornadoes (the latter from the Spanish *tornar*, to return), are such as occur in any part of the torrid or the temperate zones of the earth, though most frequently in the former. They are most known as occurring in the West India islands and contiguous seas, on the coast of Africa, and in the seas east of China and north of Australia. The name typhoon (Gr. τυφων, a whirlwind; Chin. *tae-fung*) is given indiscriminately to violent winds in southern Asia and the surrounding seas; and it may consequently designate a cyclone, a tornado proper, or a violent and often parching wind, of which the sirocco, the simoom, and the harmattan of the coast of Guinea are examples, and which at certain seasons prevail in southern and south-western Asia, in Africa, or even along the Mediterranean coast of Europe. Tornadoes, properly so called, may accompany from the first a rapidly forming rain cloud, or less frequently perhaps follow as a consequence upon a sudden and great fall of rain. More generally they occur when the surface of the earth is very warm, and the atmosphere has become highly heated, though still calm. Upon islands or coasts, the approach of such a storm may be foreboded in the morning by the appearance of dark clouds moving over the land toward the sea, while a breeze may blow in the opposite course. But quite as frequently as otherwise, they burst forth upon the land suddenly, and without distinct premonition, perhaps first upon the side of a mountain, and moving forward along a straight, curving, or tortuous track, of breadths such as already indicated, they show their terrific force by overturning, uprooting, breaking, or twisting off trees; by demolishing buildings, or lifting these and other heavy objects into the air, to scatter their parts around at great distances, or sometimes to set them down again mainly unharmed; by lifting other objects, such as the brutes, persons, sometimes even cannon, and transporting them to considerable distances; destroying crops and improvements of all kinds in their track; and upon the sea, oversetting or wrecking ships, or driving them ashore. Some of these effects of course result only from the most violent tornadoes; and the destruction occasioned by a single wind of this kind will usually vary much in different parts of its course. As the rule, the energy of the wind and the havoc it produces are greatest near the circumference of the whirl; and places over which at any moment its centre is situated may experience for the time an almost total lull of wind, to be renewed in all its violence, however, as the posterior margin of the whirl reaches them. The prostration of trees and conveyance of various bodies in generally opposite directions along the two margins of the track, and the circumstance of trees being felled in successive parcels lying one across the other, and often in exactly opposite directions along the middle of the track, are among the proofs of the actually revolving character of these winds. As already remarked, though these winds may first appear from a clear, or at most only a hazy or murky sky, yet they seldom proceed far in such case without the formation of dense masses of cloud over them, that move along with them, presently pouring down torrents of rain, attended with vivid lightning and heavy peals of thunder. The production of cloud and rain in such cases is plainly a consequence of the sudden ascent within the whirl, and from the surface of land or sea, of large masses of air likely to be nearly or quite saturated with vapor, which as it passes upward is, both by the mechanical rarefaction due to the vortex and by the greater cold already present in the higher strata, rapidly condensed. It is on a like principle that a fall of rain has been not unfrequently occasioned by the burning of forests or prairies in America, or even, it is said, by great fires made for the purpose; and that rain storms with lightning and thunder are often brought on during a volcanic eruption, directly over the crater. When, at sea, a tornado attended with a thunder storm is approaching a ship, the lightning may be observed in almost incessant sheets descending from the cloud; as the storm comes directly over the ship, the flashes about it may cease, while the points of the masts and spars become luminous, and a sharp, crackling noise indicates the movement of the electrical charge along the masts; when the storm recedes, the sheets of lightning are seen as before. Incidentally, it may be remarked that these facts, in reference to the occurrence of lightning in storms evidently brought on by general mechanical and thermal agency, have a marked interest in meteorology, as going to show that, in a large class of instances at least, electric discharge is not the antecedent or cause of the fall of rain, but is in fact a consequence directly either of the precipitation of large bodies of water out of the air, or of the conditions that determine that precipitation. The tornadoes of the less breadth or diameter, sometimes of no more than 100 or 200 yards, are those most apt to break from a tranquil sky, but one which has become very greatly heated; they soon acquire their greatest violence, advance rapidly, and, though sometimes continuing no more than half an hour, may produce great devastation and loss of life along their course. Tornadoes over the sea are often accompanied with one or more complete water spouts, and over the land with partial water spouts or with columns of dust. The close similarity of these phenomena renders it desirable to treat of them in connection. (See WATER SPOUT.)—In reference to the production of tornadoes, there are two ways in which at different times they evidently have their origin. One of these is by the meeting of two rapid currents of air, giving rise to an eddy which increases in extent, and results in a compression of the air about the position of its axis; this compressed air, finding no escape downward or laterally, is forced upward, establishing a current in that direction, while the centrifugal tendency of the whirl conduces also after a little time to rarefy its middle portions; and the upward current, as well as the whirl itself, are prolonged by air close to the surface rushing from all sides into, and a part of it up through the vortex. Such whirlwinds differ wholly from cyclones, in that the ascensional movement in the latter precedes the revolution of the wind, or they are primarily attended with rarefaction; while in the tornadoes produced as now explained, the upward movement is only a mechanical consequence of the meeting and revolution of the winds, these effects being primarily attended with compression. In case of other tornadoes, however, and especially those of least breadth and most rapid motion above referred to, a rarefaction of the air just precedes and leads to the turning of the wind. The strata of the air near the surface of land or sea becoming very highly heated, and most so within some limited tract, may yet be held by the elasticity of surrounding parts for a time in a sort of unstable equilibrium; when some inequality first suffices to disturb this, the already rarefied mass of air rushes up very suddenly; other bodies of air flow in at once from all sides, and a gyratory motion results, as is common in a body of water which is allowed to run from an orifice in the bottom of a vessel, and within which currents from all sides are pressing toward the orifice. From the nature of either set of causes of tornadoes, it follows that in these the effect of the earth's rotation must always be small, and usually insignificant, in comparison with that of the combined impulses of the bodies of air at the place. Consequently, in tornadoes, the rotation may be in either direction, as determined by the circumstances of the occasion; and again, though within the equatorial belt of calms there can be no cyclones, tornadoes can and do occur there as elsewhere. Finally, Sir J. Herschel and others have suggested that certain winds which dash suddenly and with tremendous velocity upon the earth, and which move from the equator, are portions of the higher currents of the trade winds breaking through from some cause to the surface of the earth, retaining for a time the speed they had acquired in regions in which they were quite removed from friction, and thus constituting hurricanes or tornadoes of the most destructive character.

WHISKEY (Irish, *uisgue*, water), a distilled spirituous liquor, made originally from malt and unmalted barley or rye, but now also manufactured from rye alone, Indian corn, or potatoes, and it is said from molasses. The process of its manufacture is sufficiently detailed, so far as the Irish and Scotch whiskey is concerned, in the article DISTILLERY; and the process adopted in the United States, especially in those establishments where it is made on a large scale, is essentially the same. Whiskey is the cheapest and most common form of intoxicating liquor made in the United States, and its production has been very large from the revolutionary period to the present time. The "whiskey insurrection" of 1791-'4 grew out of an attempt to collect an excise tax on this liquor in western Pennsylvania. The states which are most largely engaged in the manufacture of whiskey are New York, Pennsylvania, Ohio, Illinois, Indiana, and Kentucky. Considerable quantities are made also in Tennessee, Missouri, and California. The census does not distinguish between the different descriptions of distilled liquors, and it is therefore impossible to say with accuracy what is the amount of whiskey annually produced in the United States. Its value is not however less than $20,000,000, and probably considerably exceeds that sum. A portion of this is subsequently rectified and reduced to alcohol; but by far the larger part is consumed as whiskey or exported to foreign countries, where, by the addition of drugs, coloring matter, &c., it is transformed into "French brandy," "Holland gin," or other liquors, and often reëxported as such to the United States. The whiskey of Pennsylvania and Kentucky, and the better qualities of that manufactured in New York, are distilled from rye; most of that produced in Ohio, Indiana, Illinois, and Missouri is from Indian corn, which contains a larger quantity of fusel oil. A great deal of whiskey was formerly made from the common potato, the starch in which is readily changed to sugar. The best quality of the rye whiskey from Pennsylvania, known as "Monongahela," and from Bourbon co., Ky., is much in demand, and brings a high price. The inferior kinds are adulterated with various drugs to give them the appearance and taste of the better brands. The value of whiskey exported from the United States in 1857 was $1,248,234; in 1859, $273,576; in 1860, $311,595; and in 1861, $867,954.

WHIST, a game at cards, described by Hoyle as one requiring great attention and silence, whence the name; and by Mathews as a game of calculation, observation, and position or tenace. It is played with a full pack of cards by 4 persons, of whom those sitting opposite to each other are partners. The players before commencing the game cut for partners, and the two cutting respectively the highest and the lowest cards (the ace reckoning as the lowest and the king as the highest) play together. The one who cuts the lowest card of all takes the deal. The cards, having been shuffled by the dealer and cut by his right hand adversary, are distributed, one by one, to each of the players, commencing on the left, until the pack is exhausted. The last card, called the trump card, is turned up by the dealer, and must remain exposed until the first trick is turned. The play is commenced by the dealer's left hand adversary, and the game consists of 10 points, which are scored either by tricks or honors, or by both. The person winning the trick plays again, and so on until the cards are played out, and each trick as soon as won is collected and turned by the winner or his partner. All over 6 tricks reckon toward the game. The ace, king, queen, and knave of trumps, called the honors, are the highest cards in the pack, reckoning in the order here given; the remaining cards rank according to the number of points or spots upon them, the ten being the highest, the nine the next highest, and so on down to the deuce. When two partners hold 3 honors between them, they are said to reckon 2 by honors, and are entitled to add 2 to their score; when they hold the 4 honors they mark 4; and when the honors are equally divided between the two sides, honors are said to be easy, and neither party can count them. Honors, however, cannot be added to the score when it stands at 9; but the party scoring 8 may call them at the commencement of the hand; that is, one partner having 2 honors in his hand may inquire of the other: "Can you one?" or "Have you an honor?" and upon the latter producing an honor the game is won. But if the honors are not called before the first trick is turned, the other party may go out by tricks, which in such case outrank honors; so that a party having scored 9 and making one by tricks wins the game, though the other side standing at 8 may hold 2 by honors. The players must follow suit or suffer the penalty of a revoke, which entitles the other side to add 3 to their score, or take 3 tricks from the revoking party or 3 from their score; an established rule of whist being that "the mistake of one party is the game of the other." The game here described is technically called long whist, but of late years a modification of it called short whist has come into vogue. Five points constitute the game, and honors do not count at 4 and cannot be called at any stage of the play. In other respects the laws and principles of the two games are nearly identical. —Whist was in general repute as early as the beginning of the last century, being perhaps derived from "ruff and honors," known a century previous; but it may be doubted whether the game spoken of by Farquhar, Pope, Thomson, and others is identical with that at present known. Edmund Hoyle, if not the first to reduce the practice of it to a science, is at least entitled to the credit of having rescued the rules from the vagueness of oral tradition by giving them a printed existence; and the laws contained in his treatise on whist, first published anonymously in 1743, can hardly be said to have been superseded by any subsequent work in general use. Mathews and others have produced works of more or less value, but the rules of Hoyle still form the basis upon which new treatises are constructed. It may be observed, however, that the government of all whist rooms rests more or less upon fluctuating conventionalisms, societies of individuals being swayed by different authorities. The laws and regulations of Deschapelles, the most eminent French writer on the subject, will be found to vary considerably from those of Hoyle or Mathews. Whist is to so considerable a degree a game of chance that no fixed rules can make a firstrate player; and the complaint made by Mathews in 1822, that a good player is rarely met with, a fine one never, is equally applicable now. Lord William Manners, a famous English player, insisted that there was no more than 5 per cent. odds between two of the best and two of the worst players; and this statement will not seem exaggerated when it is considered that the essentially different ways in which 52 cards can be distributed in equal numbers in 4 divisions amount to 16,250,563,659,176,029,962,568,164,794,000,749,006,367,006,400. Notwithstanding the element of chance thus largely infused into its practice, rendering only the most general rules of any avail, whist is beyond all question a game of system and method, and in this respect is far superior to any other game played with cards. Too much care cannot be taken to enforce the minutest rules and penalties; otherwise the door is opened to constant contention and laxity of play. The opinions of "Old Sarah Battle (now with God)," as recorded by Charles Lamb, should be kept in remembrance by every whist player: "A clear fire, a clean hearth, and the rigor of the game."

WHISTLER, a name given to the golden-eyed duck. See DUCK.

WHISTLER, GEORGE WASHINGTON, an American engineer, born at Fort Wayne, Ind. (then a part of the North-West territory), May 19, 1800, died in St. Petersburg, April 7, 1849. He was graduated at the West Point military academy in 1819, became second lieutenant of artillery, and in 1821-'2 was assistant teacher of drawing at the military academy. He was then detailed for duty on the northern boundary commission under the orders of Col. J. J. Abert, in which service he was occupied till 1828. In 1829 he was promoted to be first lieutenant, and in the same year together with Capt. McNeil and Jonathan Knight he visited Europe in the employ of the Baltimore and Ohio railroad company. In 1830 he transferred his services to the Baltimore and Susquehanna company, and in 1831 removed to New Jersey to superintend the construction of the Paterson and Hudson river railroad. The Boston and Providence railroad was next built under his direction. He resigned his commission in Dec. 1833; in 1835 he was appointed engineer to the locks and canal company of Lowell, which was engaged in building locomotive engines; and between 1837 and 1842 superintended the construction of the Stonington and Providence railroad, and the Western railroad through Massachusetts, then considered the most remarkable piece of railroad engineering in this country. In 1842 he was invited by the czar to superintend the system of internal improvements then projected in Russia. His duties while in the service of the emperor were varied and severe. Not only the railroads were to be constructed, but the iron for the track, the locomotive cars, and every thing appertaining to the roads were to be manufactured under his immediate supervision. He was also appointed engineer of the naval arsenal at Cronstadt, and was employed in the construction of fortifications, docks, and bridges, and the improvement of harbors and rivers. He was about returning to the United States when he was attacked by his last illness.

WHISTON, William, an English divine and philosopher, born at Norton, Leicestershire, Dec. 9, 1667, died in London, Aug. 22, 1752. He was educated by his father, the rector of Norton, till his 18th year, and two years later was entered at Clare hall, Cambridge, where he applied himself to mathematics and the Cartesian philosophy, took the degree of bachelor in 1690, and obtained a fellowship. He received holy orders in 1693, was obliged by ill health to give up the pupils of whom he had charge, and in 1694 was appointed chaplain of Dr. More, bishop of Norwich, and became acquainted with Newton, whose *Principia* he had already studied. In 1696 he published his "New Theory of the Earth," in support of the Mosaic account, which passed through 6 editions, and gave him an extended reputation. Among the hypotheses which he ingeniously maintained, was one that a comet must have passed just before the earth on the first day of the deluge, and that by force of attraction and the action of external tides the water beneath the crust of the earth was made to break forth and cover the surface, and thus "the fountains of the great deep were broken up;" that the vapors left upon the earth by the tail of the comet, being afterward rarefied by the solar heat, ascended into the atmosphere to return in the violent "forty days' rain;" and that subsequently a mighty wind dried up a portion of the water, and forced another portion through clefts into the abyss from which it came, while a great quantity still remained to form the oceans and seas. He was appointed rector of Lowestoft in 1698, fulfilled the duties of that office with singular industry, and vacated his fellowship by marriage, but returned to the university in 1701 as deputy of Newton in the Lucasian professorship of mathematics. He succeeded Newton in this chair in 1703, and expounded and defended the Newtonian philosophy in a series of scientific works. He had also attained eminence as a preacher, when he adopted Arianism, rejected infant baptism, and began to omit portions of the litany. The Anglican church at that time tolerated latitudinarianism, and the bishop of Ely contented himself with requesting him not to fulfil the duties of the Boyle lectureship, in which he was making his views public, but allowed the continuance of the salary. Whiston was uncompromising, resigned the lectureship, and was consequently in 1710, after several hearings before the heads of the houses, deprived of his professorship and expelled from the university. He removed to London, where he published his "Primitive Christianity" (5 vols., 1711), and for 5 years repeated but unsuccessful attempts were made before the convocation, the dean's court of St. Paul's, and a court of delegates appointed by the chancellor, to convict him of heresy. He was assailed from pulpits, refused the communion by the clergy, and denied admission into the royal society, though proposed by Halley and seconded by Sloane, but was never discouraged either in his religious or scientific speculations. A subscription amounting to £470 was made for him in 1721; and he also derived an income from reading astronomical and philosophical lectures, which were patronized by Addison and Steele, and from his publications, which were 59 in number, the most interesting of them being a singular autobiography (1749-'50), and the most widely circulated a translation of Josephus (1737). Various schemes for finding the longitude were suggested by him. He long continued a member and regularly attended the service of the church of England, but finally became a Baptist. He gathered a religious society at his own house, and believed that the millennium was to begin in 1766, when the Jews would be restored.

WHITAKER, John, an English divine and author, born in Manchester about 1735, died in Ruan-Langhorne, Cornwall, Oct. 30, 1808. He was educated at Oxford. In 1771 he published a "History of Manchester," reprinted in 2 vols. in 1773, and increased by an additional volume in 1775. In refutation of Macpherson's theory that the modern highlanders were descendants of the Caledonians of Tacitus, he wrote his "Genuine History of the Britons" (1772), maintaining that they were descended from an Irish colonization which followed the Roman invasion. In 1773 he was made morning preacher at Berkeley chapel, London; but in two months he was removed. In 1778 he was presented by his college to the rectory of Ruan-Langhorne. His most important works are: "Sermons upon Death, Judgment, Heaven, and Hell" (8vo., 1783); "Mary, Queen of Scots, vindicated" (3 vols. 8vo., 1787; enlarged ed., 1790); "Gibbon's History of the Decline and Fall of the Roman Empire reviewed" (8vo., 1791); "The Origin of Arianism disclosed" (8vo., 1791); "The Course of Hannibal over the Alps ascertained" (2 vols. 8vo., 1794); and "The Life of St. Neot" (1809). He began also a history of London and a history of Oxford, and composed some poetry which was printed in the work entitled "The Cornwall and Devon Poets."

WHITBREAD, Samuel, an English statesman, born in London in 1758, committed suicide while insane, July 6, 1815. The son of a wealthy brewer, he was educated at Eton and at St. John's college, Cambridge, and after leaving the university made the tour of Europe. He entered parliament in 1790, and remained a member till his death. He was a friend and adherent of Mr. Fox, and after the death of that statesman was regarded as one of the leaders of the whig party in the house of commons. He conducted the impeachment of Lord Melville. He was a man of great benevolence, and in parliament an earnest, vehement energy, combined with the general conviction of his integrity, gave him a reputation for eloquence, not sustained by his published speeches. He took an active part in the affairs of Drury Lane theatre, and the troubles in which it was involved gave him so much anxiety that they were thought to have brought on the derangement which led to his death, though an autopsy indicated that a local pressure on the brain might have made him insane.

WHITBY, Daniel, D.D., an English divine, born at Rushden, Northamptonshire, in 1638, died in Salisbury, March 24, 1726. He was educated at Trinity college, Oxford, of which he was elected a fellow in 1664, took orders, and was prominent among the controversial writers against popery during the period from the restoration to the revolution. He had published two books against the Roman Catholic faith, when in 1668 he was collated by the bishop of Salisbury, who had appointed him his chaplain, to two prebends in his cathedral, in which he became chantor or precentor in 1672. He was about the same time presented to the rectory of St. Edmund's at Salisbury, which he held during the remainder of his life. Among his numerous anti-Catholic treatises were a "Discourse concerning the Laws, Ecclesiastical and Civil, made against Heretics by Popes, Emperors, &c." (1682); "The Fallibility of the Roman Church demonstrated" (1687); and a "Treatise of Traditions" (1688–'9). In 1683 he published anonymously "The Protestant Reconciler," a plea for a fuller communion between churchmen and dissenters. It was violently assailed, condemned by the university of Oxford to be burned, and the author was obliged pointedly and distinctly to retract its main principles. After the accession of William and Mary two treatises appeared from him in defence of the revolution. His most important work is "A Paraphrase and Commentary on the New Testament" (2 vols., 1703), which is still in esteem as an Arminian exposition, in connection with which he afterward produced "The Necessity and Usefulness of the Christian Revelation." In 1710 he published two other works in illustration and defence of Arminianism, "Concerning the True Import of the Words Election and Reprobation," often reprinted as "Whitby on the Five Points," and "Four Discourses." His views gradually diverged still further from the Calvinism in which he had been bred and educated, and under the influence of Dr. Clarke he became a convert to Arianism. He defended his new opinions in a Latin treatise against the authority of the fathers in theological controversy (1714), in a "True Account and Confutation of the Doctrine of the Sabellians" (1716), and in a disquisition on the difficulties attending the study of the doctrine of the Trinity (1720), the last introducing a controversy between him and Dr. Waterland. He engaged also in the Bangorian controversy, defending Bishop Hoadley in two pamphlets. That he always cherished his Arian principles appears from his "Last Thoughts," published posthumously with a biography by Dr. Sykes.

WHITE. See Color.

WHITE. I. A new N. co. of Ga., drained by the head waters of the Chattahoochee river; pop. in 1860, 3,314, of whom 263 were slaves. The surface is undulating and the soil fertile. II. A central co. of Ark., bounded on the E. by White river, and intersected by Little Red river and Bayou des Arc; area, 1,044 sq. m.; pop. in 1860, 8,316, of whom 1,432 were slaves. The surface is undulating and partly occupied by dense forests. The productions in 1850 were 110,935 bushels of Indian corn, 4,388 of sweet potatoes, 262 bales of cotton, and 1,928 lbs. of tobacco. Large quantities of lumber are exported. Capital, Searcey. III. A central co. of Tenn., bounded on the S. and S. W. by the Caney fork of Cumberland river; area, 672 sq. m.; pop. in 1860, 9,381, of whom 1,145 were slaves. The surface is hilly and diversified by fine forests. The productions in 1850 were 14,679 bushels of wheat, 599,015 of Indian corn, 59,407 of oats, 36,595 of sweet potatoes, 119,508 lbs. of butter, and 20,779 of tobacco. There were 30 grist mills, 5 saw mills, 5 tanneries, 1 newspaper office, 26 churches, and 2,500 pupils attending public schools. Capital, Sparta. IV. A N. W. co. of Ind., intersected by the Tippecanoe river, and by the New Albany and Salem railroad; area, 504 sq. m.; pop. in 1860, 8,263. The surface is mostly level and the soil very fertile. The productions in 1850 were 32,930 bushels of wheat, 373,013 of Indian corn, 36,266 of oats, and 16,957 lbs. of wool. There were 8 churches, 1 newspaper office, and 1,600 pupils attending public schools. Capital, Monticello. V. A S. E. co. of Ill., separated from Indiana by the Wabash river, and intersected by the Little Wabash; area, 480 sq. m.; pop. in 1860, 12,403. It is diversified by prairie and woodland, and has a very fertile soil. The productions in 1850 were 15,293 bushels of wheat, 708,815 of Indian corn, 54,278 of oats, 146,369 lbs. of butter, and 28,129 of tobacco. There were 10 grist mills, 6 saw mills, 21 churches, and 1,000 pupils attending public schools. Capital, Carmi.

WHITE, Gilbert, an English naturalist, born in Selborne, July 18, 1720, died June 26, 1793. He was educated at Oxford, and was made senior proctor of the university in 1752. At an early period of his life he retired to his native village, where he lived engrossed by his favorite pursuit of natural history. He had frequent offers of preferment in the church, but declined them. He wrote the "Natural History of Selborne" (4to., 1789), one of the English classics. After his death there was published, selected from a natural history journal kept by him, "A Naturalist's Calendar, with Observations in various Branches of Natural History," which was edited by Dr. Aikin.

WHITE, Henry Kirke, an English poet, born in Nottingham, March 21, 1785, died in Cambridge, Oct. 19, 1806. He was the son of a butcher, and assisted his father until his 14th year, often poring over a volume while carrying the butcher's basket, and having meantime acquired an acquaintance with the French language and begun to write verse. At the request of his mother, who, with her eldest daughter, had opened a successful girls' school, he was apprenticed to a stocking weaver; but after a year, he "felt that he should be wretched if he continued longer at this trade, or indeed in any thing except one of the learned professions." He was therefore placed in an attorney's office, and with unremitting diligence applied himself to the Latin, Greek, Italian, Spanish, and Portuguese languages, to some of the sciences, to drawing, and to playing the piano. His devotion to the law, also, was so remarkable that it seems wonderful that he could have found time for any thing else. In his 15th year he began to acquire distinction as a speaker in a literary society at Nottingham, to obtain prizes from the "Monthly Preceptor," a London magazine, which proposed prize themes to the young of both sexes, and to write for several other publications. The proprietor of the "Monthly Mirror," and others, encouraged him in 1804 to publish a volume of poems, dedicated by permission to the duchess of Devonshire, who however failed to take notice of the author. It attracted little attention, and incurred some contemptuous criticisms, which inflicted the most exquisite pain upon the young poet. The volume however fell into the hands of Mr. Southey, who wrote to White encouragingly, and to whose generous care he is largely indebted for his fame. Before the appearance of this volume he had been converted from religious indifference to that earnest Christian faith which marks his writings, and his chief desire now was to gain a university education in order to devote himself to the church. After many difficulties he obtained in 1804 a sizarship at St. John's college, Cambridge, with additional pecuniary aid; and though he exhausted himself by his severe studies, and hesitated to appear at the college examination, he was yet pronounced the first man of his year. In the second year his name was also placed first, and he was declared one of the three best theme writers, between whom the examiners could not decide. The college offered him a tutor in mathematics during his vacation, and made him independent of the pecuniary assistance which he had received from his friends. But he achieved his distinction by the sacrifice of health and life. "Were I," said he, "to paint Fame crowning an under-graduate after the senate-house examination, I would represent him as concealing a death's head under a mask of beauty." After a visit to London, he returned to college only to die of consumption. A tablet to his memory, bearing an inscription with a medallion by Chantrey, was placed in All Saints' church, Cambridge, by Mr. Francis Boott, an American gentleman. His papers were transferred to Southey, who in 1807 published a selection from them, in prose and verse, with a charming biography. A supplementary volume appeared in 1822; and both, united under the title of "The Remains of Henry Kirke White," have since passed through many editions.

WHITE, Hugh Lawson, an American statesman, born in Iredell co., N. C., Oct. 30, 1773, died in Knoxville, Tenn., April 10, 1840. He served as a private soldier during the Indian hostilities in 1792; in 1794 went to Philadelphia, where he studied mathematics; afterward studied law at Lancaster, Penn., and in 1796 commenced practice at Knoxville, Tenn. In 1801 he was appointed judge of the supreme court of the state, in 1807 became U. S. district attorney, in 1809 state senator, and in the same year was again called to the supreme court bench, where he served till 1815. In 1820 he was again a member of the state senate, and in 1821 was appointed by President Monroe one of the commissioners to adjust the claims of our citizens against Spain. In 1825 he was elected senator from Tennessee. In 1835 Tennessee and some of the other southwestern states nominated Judge White for the presidency, and at the election in 1836 he received 26 electoral votes. In 1839 he resigned his seat in the senate, having been instructed to vote contrary to his convictions.

WHITE, Joseph Blanco, a Spanish priest and English author, born in Seville, July 11, 1775, died in Liverpool, May 20, 1841. His grandfather was an Irishman, who settled in Seville, became a flourishing merchant, and was raised to the rank of the nobility. His father failed in business, but marrying a Spanish lady of rank reëstablished his affairs. Blanco was early taken into his father's counting-house, but, being disinclined to mercantile pursuits, he was at the age of 12, at his own request, sent to college to be educated for the Roman Catholic priesthood. He was ordained a priest in 1799, but soon conceived a dislike for the profession, and in 1780 went to England, where he passed the remainder of his life. He conducted in London with ability and success a Spanish periodical, entitled *El Español*, until 1814, when he received from the English government a life pension of £250. He then joined the church of England, with a view to the clerical profession, but soon abandoned the project; and his religious opinions subsequently passed through various phases, resting for a time in Unitarianism. He first attracted attention by a series of papers, entitled "Letters from Spain," which appeared in the "New Monthly Magazine" in 1820, and were republished in 1822. He conducted from 1822 to 1825 a Spanish quarterly, entitled *Las variedades*. He edited the "London Review" during its existence of 6 months (1829), contributed to the "Quarterly Review," the "London and Westminster Review," and the "Dublin University Magazine," and published "Practical and Internal Evidence against Catholicism" (1825), "The Poor Man's Preservative against Popery" (1825), and "Second Travels of an Irish Gentleman in Search of a Religion" (2 vols., 1833), in answer to the work of Moore. A sonnet by him, entitled "Night," was pronounced by Coleridge one of the finest in the language. He resided chiefly in London, but occasionally at Oxford and Dublin, and in 1839 removed to Liverpool, where he remained till his death. His most interesting work is an autobiography, with portions of his correspondence, edited by J. H. Thom, and published posthumously (3 vols., London, 1845).

WHITE, Peregrine, the first child born in New England of English parents, born on board the Mayflower, in the harbor of Cape Cod, about Dec. 20, 1620, died in Marshfield, July 20, 1704. He was the son of William and Susannah White, and received on account of his birth 200 acres of land from the general court, filled various civil and military offices, and "was vigorous and of a comely aspect to the last."

WHITE, Richard Grant, an American journalist and author, born in the city of New York, May 23, 1822. He was graduated at the university of New York in 1839, studied medicine without intention of practising, and afterward studied law and was admitted to the New York bar in 1845. Having for years devoted his leisure to the study of music theoretically and practically, he wrote some musical criticisms for the "Courier and Enquirer" newspaper, which led to his becoming associate editor of that journal, to which for several years he contributed a large portion of its leading articles as well as all its criticisms on art and literature. In 1859 he withdrew from the "Courier and Enquirer," and in 1860 joined Mr. J. R. Spalding in establishing the "World," a daily newspaper in New York, with which his connection ceased in 1861. He has contributed much to reviews and magazines, and some articles from his pen in "Putnam's Monthly" for 1853 on Collier's new readings in Shakespeare excited very general attention. In 1854 he published "Shakespeare's Scholar," an octavo volume of critical essays upon the great poet; and his studies in this direction have since expanded into a new edition of Shakespeare (12 vols., Boston, 1857-'62). He has also published an "Essay on the Authorship of Henry VI." (New York, 1859), and "National Hymns" (New York, 1861).

WHITE, William, D.D., first bishop of the Protestant Episcopal church in the diocese of Pennsylvania, born in Philadelphia, April 4, 1748, died there, July 17, 1836. He was graduated at the college of Philadelphia in 1765, studied theology, and repairing to England was ordained deacon by the bishop of London in 1770, and priest by the bishop of Norwich in 1772. Returning to Philadelphia, he became assistant minister and afterward rector of Christ church and St. Peter's church. At one time he was the only Episcopal minister in Pennsylvania. In 1777 he was elected chaplain to congress. The meeting which issued a call for a convention preparatory to the organization of the Protestant Episcopal church in the United States was held at his house in 1784, and he presided over the convention (1789) and wrote the constitution of the church. With Bishop Seabury he had the chief part in revising the "Book of Common Prayer" for the use of the Episcopal church in this country. Having been elected bishop of Pennsylvania in 1786, he proceeded to England, and was consecrated together with Bishop Provoost of New York by the archbishop of Canterbury, Feb. 4, 1787. He wrote "Memoirs of the Protestant Episcopal Church;" "Comparative Views of the Controversy between the Calvinists and Arminians;" "Commentary on the Ordination Services;" "Lectures on the Catechism," &c.—A memoir of his life was written by Dr. Bird Wilson (Philadelphia, 1839).

WHITE ANT. See Termites.

WHITE BEAR. See Bear.

WHITE BRETHREN. See Brethren.

WHITE DAISY. See Oxeye.

WHITE FISH (*coregonus albus*, Lesueur), a valuable member of the salmon family, peculiar to North America. It is found in the great lakes from Lake Erie to the Arctic sea, in Lake Champlain, in the smaller lakes of Lower Canada connected with the St. Lawrence on the S. side, and in the Mackenzie, Coppermine, and other rivers flowing into the icy sea, even as low down as brackish water; it is the *attihawmeg* of the north-western Indians. The mouth is small and without teeth, the body elongated but thick, head small and pointed, tail forked, first dorsal not so long as high in front, and scales large. It attains a length of 1½ to 2½ feet, and a weight of 3 to 10 lbs., in the clear waters of Lake Superior becoming very large and fat; its general appearance is shad-like, whence it is called lake shad at Burlington, Vt.; the vendace of Europe, previously described, belongs to the same genus. It is bluish gray on the back, lighter on the sides, and white below. In October they enter the rivers from the lakes to spawn, usually returning in about 3 or 4 weeks; gregarious, they move from place to place according to the supply of food, which consists of insects and larvæ, tender aquatic plants, soft-shelled mollusks, and occasionally small fishes; they die very quickly when taken out of the water. They are caught principally by gill nets, most abundantly when spread under the ice, the fish entering chiefly at night; the fishery is accompanied by considerable labor and exposure, as the nets should be examined every day; the fish are sometimes speared by the Indians through holes in the ice. The flesh is delicious, fat, and at the same time easily digested; it is eaten both fresh and salted; the stomach is extremely thick, resembling the gizzard of a fowl, and is a favorite morsel. It forms the principal food of many Indian tribes, and of the fur traders, for 8 or 9 months in the year; the flesh is bluish white, changing when boiled to pure opaque white, whence the name. Many are caught in Lake Champlain by seines in May and June, and sell fresh for 6 to 10 cents a pound. There are several other allied species, all inferior as articles of food.—De Kay describes the Otsego white fish (*C. Otsego*, De Kay), or shad salmon of that lake, 1½ feet long, dusky above the lateral line and silvery below it, with 6 or 8 dusky lateral stripes as in the bass (*labrax lineatus*, Cuv.). It is now rare, and taken, if at all, in seines; its flesh is of exquisite flavor.

WHITE GUNPOWDER, an explosive compound formed of 3 parts of chlorate of potash, 1 of white sugar, and 1 of ferrocyanide of potassium, separately pulverized, and then intimately mixed in a wooden mortar with a wooden pestle. It has the dangerous property of the other fulminates of exploding by friction and percussion, and should never be prepared except in very small quantities. If a minute drop of sulphuric acid wets any portion of it, the whole mass explodes.

WHITE LEAD, or CERUSE, a compound of oxide of lead and carbonic acid, used chiefly as a paint. Its composition is represented by the formula PbO, CO_2; but a variable proportion of oxide of lead (PbO, HO) is commonly present in addition. The manufacture was introduced by the Dutch, who practised it exclusively till about the close of the last century, when it was adopted by the English. It was introduced into Philadelphia about the year 1815.—White lead is distinguished for its perfect whiteness, and for forming when finely pulverized a soft and heavy powder, which mixes readily with oil, giving to it a drying property. Pure white lead has the reputation of being the best paint in respect of color and body. It is also used in the preparation of vulcanized caoutchouc. The preparation of the pure white lead requires the use of the purest metallic lead; and that preferred is either European lead that has been refined, or the metal from the upper mines of the Mississippi. The old method was to use the metal in thin sheets, cut in small pieces, each of which was rolled into a loose spiral, in which form it could be conveniently subjected to the action of the vapors by which its conversion into carbonate is effected. Instead of these spirals the metal, after the invention of Mr. Augustus Graham of Brooklyn, N. Y., is now almost universally cast in the form of gratings or "buckles," so called from their resemblance to the large shoe buckles of former times. The thickness of the lead is only about ⅛ of an inch, and the diameter of each buckle is 6 or 8 inches. In some of the factories, as in Brooklyn, the casting is rapidly effected by the application of ingenious machinery which presents a succession of moulds to the current of melted lead flowing from the furnace, and without any handling the buckles as soon as they become solid are separated from each other and discharged into the vessels for receiving them.—In converting white lead into the carbonate, it is exposed for a long time to the vapors of water and acetic acid in an atmosphere of carbonic acid. The effect of the vapors is to oxidize the outer portion and convert it first into the neutral acetate ($PbO, C_4H_3O_3$) and then into a triacetate of lead ($3PbO, C_4H_3O_3$). By the action of carbonic acid this is transformed into carbonate of the oxide, and the acetic acid is set free to act again upon other portions of lead. The chemical changes are represented by the following formulas:

$$PbO, C_4H_3O_3 + 2PbO = 3PbO, C_4H_3O_3; \text{ and}$$
$$3PbO, C_4H_3O_3 + 2CO_2 = PbO, C_4H_3O_3 + 2(PbO, CO_2).$$

In carrying out the operation upon a large scale, the buckles are laid in earthen pots shaped like flower pots, and are supported above the bottom by a ledge or points projecting from the inner surface. Some vinegar or strong acetic acid is placed in the bottom of each pot; and in order to admit a freer circulation of the vapors, it is well to break a piece out of the upper edge of each pot, unless it be made with a gap in this portion. In extensive white lead works an immense supply of these pots is kept on hand, the number in one of the establishments in Brooklyn amounting to about 150,000. When charged with the acid and buckles, they are set close together in rows upon a bed of spent tan, a foot or two thick over any convenient area, as one of 20 feet square or less. The pots are loosely covered with thin sheets of lead, and pieces are laid in the openings between them, always however in such manner as to leave abundant interstices for the circulation of the vapors. A flooring of boards is then laid over the pots, and this is covered with another layer of tan, on which is set a second course of pots and lead. Thus successive tiers are built up, to the height it may be of 25 feet, the sides being secured by boards fastened to framework. A single stack may thus contain 50 or 60 tons of lead distributed among some 12,000 pots. The whole is covered by a layer of tan. Soon after the pile is completed the tan begins to ferment, and thus generates heat, which causes the vinegar to evaporate and its vapors to circulate among the lead. The process goes on as long as the tan continues to ferment, which may be from 8 to 12 weeks; and consequently, in order that there may be no interruption to the work, it is necessary to have a number of stacks, that the workmen may be constantly employed in making up or discharging some, while the others are in operation. On taking the stack to pieces at the end of the process, the lead is collected in its original shapes, but of increased bulk and weight in consequence of its accession of carbonic acid and oxygen. The conversion is not always complete, owing to a variety of circumstances, some of which, as the weather and the season, which materially affect the process, cannot be controlled. As the change goes on from the exterior, the inner portion of the lead is the last converted; and where the process is not complete, the pieces partially converted contain under the crust of white carbonate a core of metal technically termed "blue" lead. This is separated and reserved for the next operation by beating off the white crust; and in order that the health of the workmen may not be injuriously affected by the escape of the fine particles into the air, this operation is performed upon perforated copper shelves set in large wooden tanks and covered with water. This is found to be preferable to the use of rolling machines, which are employed for the same purpose in Europe. The white lead collected from the tanks is next ground with water between millstones, and the process is repeated until the lead paste is reduced to an impalpable consistency. The next operation is to separate the water, which is done by evaporation. In Europe, the creamy mixture is turned into earthen pots and left to dry upon shelves in a temperature not exceeding 300°; but in the United States shallow pans of sheet copper are used instead of the pots, and are provided with a double bottom, into which the exhaust steam of the engine is admitted. These are called drying kilns, and are often of large dimensions, as 100 feet long and 6 broad, and several are arranged one above another. They are charged from the bottom of large tanks set at a higher level in the building, the liquid lead paste being pumped up from below. As the heavier portion of the paste is drawn off from the bottom into the tanks, the thinner liquid from the surface is returned below to be mixed with fresh portions of white lead. Tables covered with tiles, and heated by flues in the brickwork of which they are constructed, are also used for drying the lead paste. The drying process requires from 4 to 6 days, and when completed the white lead is ready to be packed in small casks for the market. Thus prepared, the white lead is a pure article, and is guaranteed as such by the manufacturers. It is however mostly purchased by another class of manufacturers, known as the paint-grinders, who prepare and furnish the various paints for general consumption, and who mix the white lead with other cheaper substances, adding the various coloring matters for making the colored paints. The principal article used to adulterate white lead is the mineral sulphate of barytes, termed from its great weight, which is almost equal to that of white lead, heavy spar. (See Barytes.) It is obtained in crystalline masses perfectly white, but not so brilliant as white lead; and it has not moreover the body of white lead, that is, the same weight of it will not cover so large a surface. It is more unchangeable than white lead, and is not affected by noxious vapors and gases, such as sulphuretted hydrogen gas, by the action of which white lead paint is soon discolored. To some extent therefore there is no objection to its intermixture, and most of the paints in use contain a greater or less proportion of it. Another substance of late years largely mixed with white lead is the white oxide of zinc, and a large proportion of the paints employed, and supposed by the consumers to be white lead alone, are made up of all three ingredients. (See Zinc.) The following table presents the number and situations of the principal white lead works in the United States, together with an approximate estimate of their annual production:

Places.	No. of works.	Tons.
Brooklyn, N. Y.	3	6,000
Staten Island, N. Y.	1	1,000
Hudson river (Saugerties), N. Y.	2	1,000
Buffalo, N. Y.	1	1,000
Philadelphia, Penn.	2	3,000
Pittsburg, Penn.	1	....
Baltimore, Md.	1	600
Boston, Mass.	1	1,500
Salem, Mass.	1	....
Cincinnati, Ohio	2	....
Louisville, Ky.	1	....
Chicago, Ill.	1	....
St. Louis, Mo.	1	....

WHITE MOUNTAINS, a mountain chain of New England, usually regarded as one of the outliers of the Appalachian range. It commences about the head waters of the Aroostook river in Maine, its first considerable summit being Mt. Katahdin; the deep valley of the Chesuncook, Pemadumcook, and Millinoket lakes divides it; but beyond these rise on either side of the deep depression of Moosehead lake Baker mountain and Bald mountain; thence its course is S. W. Dead river, one of the largest affluents of the Kennebec, forces a passage through it, and near the S. bank of that river it rises again in the important summit of Mt. Bigelow. It continues its S. W. course to the Androscoggin, sending a spur northward, along the E. bank of the Magalloway river, and along the shore of Lake Umbagog. After the passage through it of the Androscoggin, it spreads out S. of that river into a broad plateau, 1,600 to 1,800 feet in height, 30 m. in length from N. to S., and about 45 in breadth, extending nearly across the state, and bounded on the S. by the Merrimack river and Squam, Winnipiseogee, and Ossipee lakes. This plateau, from which rise nearly 20 peaks, of various elevation, and which is traversed by several deep narrow valleys, forms the region known to tourists as the "White Mountains." The peaks cluster in two groups, the eastern or White mountain group proper and the Franconia group, separated from each other by a table land varying from 10 to 20 m. in breadth. The principal summits of the eastern group are, beginning at the Notch and passing around to Gorham, Mts. Webster, Clinton, Pleasant, Franklin, Monroe, Washington, Clay, Jefferson, Adams, and Madison. Of these Mt. Washington is the highest, and is indeed the highest mountain summit in New England, being 6,285 feet above the level of the sea. The height of some of the other peaks is as follows: Pleasant, 4,712 feet; Franklin, 4,850; Monroe, 5,349; Jefferson, 5,657; Adams, 5,759; Madison, 5,415. The principal summits of the Franconia group are Mts. Pleasant, Lafayette (5,500 feet), Liberty, Cherry mountain, and Moosehillock (4,636). Near the southern border of the plateau rise Whiteface mountain, Chocorua Peak (3,358 feet), Red hill, and Mt. Ossipee; and in the S. E., Mt. Kearsarge (2,461 feet). North of the plateau, and near the upper waters of the Connecticut river, are several considerable summits, of which the twin mountains known as the Stratford peaks are the most considerable. The plateau is traversed and its surface deeply furrowed by several streams: the Androscoggin and its tributaries, which form the N. E. valley; the Saco and its branches, which form two deep depressions in the E. group, and finally form a part of the S. E. boundary of the plateau; the Pemigewasset, the principal affluent of the Merrimack, which divides the Franconia group from N. to S.; and the Lower Ammonoosuck and Israel's rivers, tributaries of the Connecticut, which form valleys in the N. W. part of the plateau. The geological formation of the White mountains is almost entirely of the ancient metamorphic rocks. In many of the peaks the upper portion is composed of huge masses of naked granite or gneiss; and the debris which in the course of ages have clothed the lower portion with a coarse gravelly soil, possess only enough of the constituents of vegetable life to support those trees and shrubs which will grow in the hardest and poorest soil. Land slides, not the result of a glacier movement, but of dislodgment of bowlders and loosely adherent soil after heavy rains, are not infrequent. One of these, occurring in the notch of the White mountain group in Aug. 1826, destroyed a whole family named Willey, consisting of 9 persons. The slide was occasioned by a deluge of rain in the night, and the bodies were found buried beneath it at a distance from their dwelling, which, although they had fled from it, remained uninjured, the mass of stones and earth having divided at some distance in its rear and swept down each side of it. The most noteworthy of many waterfalls among the mountains are: the Artist's fall in North Conway; the Silver cascade, a beautiful thread of water descending from far up the side of Mount Webster; Ripley's falls, on a tributary of the Saco, below the Willey house, the lower one, Sylvan Glade cataract, falling, at an angle of 45°, 156 feet, in a stream from 50 to 75 feet in width; the falls of the Ammonoosuck, which in a course of 30 m. descends over 5,000 feet; the Berlin falls, on the Androscoggin, descending over 200 feet in the course of a mile; and the Crystal cascade and Glen Ellis fall, near the Glen house, on a tributary of the Androscoggin. Of the "notches," or passages rent through the solid granite of the mountains apparently by some violent convulsion of nature, there are 5: the White mountain notch, 2 m. in length, and at its narrowest point only 22 feet wide, through which the Saco river passes; the Franconia notch, which permits the passage of the Pemigewasset; the Pinkham notch, through which a branch of the Saco and one of the Androscoggin find their way; and the Grafton and Dixville notches, through which flow the Androscoggin and one of its tributaries. The first two of these are those best known. "The Flume" at Franconia notch is the most noted of those narrow waterways excavated through the rock, though there are others hardly inferior to it in attractiveness. Among the other objects of interest in the Franconia group is the "Old Man of the Mountain," a well defined profile of the human face formed by 3 projecting rocks. (See FRANCONIA.) At the base of the mountain lies a beautiful lakelet ¼ of a mile long and ⅛ wide, called "Profile lake," or the "Old Man's Washbowl." Five miles S. of the notch is the "Basin," a circular bowl-like cavity 45 feet in diameter and 28 in depth, produced by the whirling of large stones in a natural hollow in the rock by the current. It is filled with clear sparkling water, which flows down the mountains in a succession of beautiful clear cascades. The "Pool," in the same vicinity, is a natural well in the solid rock 60 feet in diameter and 190 feet deep, of which 40 feet is water. The ascent of Mt. Washington was until recently a toilsome, and at times a dangerous feat; but a carriage road has been constructed to the summit, rendering the ascent comparatively easy. A rough stone building, 40 by 22 feet and 8 feet high, with walls 4 feet thick, was erected under the lee of the highest rocks on Mt. Washington some years since, and a second structure, known as the "Tip-top House," not long after. The White mountain plateau is approached by travellers from 4 directions, viz.: from the E. by the Grand Trunk railroad to Gorham; from the S. by Lake Winnipiseogee and the valley of the Pemigewasset; from the S. W. by way of the Connecticut river and White mountain railroad or the Boston and Montreal railroad to Littleton; and from the N. by the Grand Trunk railroad to Northumberland.—The White mountains were first visited by a white man in 1642, Darby Field of Pascataquack having, as Winthrop informs us, ascended Mt. Washington with two Indians in that year. Thomas Gorges, a relative of the proprietor of Maine, with some friends, also visited them in Aug. 1642, taking the route by the Saco river. They discovered that this plateau included the sources of the Connecticut, the Saco, the Androscoggin, and the Kennebec rivers. The first published narrative of a visit to the mountains was that of a naturalist, John Josslyn, given in his "New England's Rarities discovered" (1672). Josslyn visited the mountains between 1663 and 1671, and seems to have had some intercourse with the Indians in the vicinity, as he gives their traditions in regard to their origin, as well as a very vivid and interesting description of the mountains themselves. No settlements were made in the region till about 1771. The first scientific exploration was made in 1784 by the Rev. Manasseh Cutler, D.D., of Ipswich, and two friends. Their explorations led to other visits and settlements. In 1797, and again in 1803, President Dwight passed through the White mountain notch, and he gives a full description of it in his "Travels." In July, 1804, Dr. Cutler again visited the mountains, and made observations to ascertain the height of Mt. Washington, and with some friends collected the alpine plants of the region. In 1816 Dr. Bigelow, Dr. Francis Boott, Mr. F. C. Gray, and Chief Justice Shaw made a thorough natural history survey of the mountains, which was published by Dr. Bigelow under the title of "Account of the White Mountains of New Hampshire." The flora of the mountains was also thoroughly explored by Mr. W. Oakes, of Ipswich, who published in 1828 a quarto volume entitled "Scenery of the White Mountains," illustrated with 16 plates. The most complete work illustrative of the scenery, botany, and history of the region is "The White Hills, their Legends, Landscapes, and Poetry," by the Rev. T. Starr King (Boston, 1860).

WHITE PLAINS, a township and village and the capital of Westchester co., N. Y., situated on the Harlem railroad, 26 m. N. E. from New York city; pop. about 1,500. The village contains 6 churches and several seminaries. Forming a part of the debatable ground between the British and American lines, it was the scene of several important events during the revolutionary war. The most noticeable of these was the action usually known as "the battle of White Plains," though it actually occurred in the town of Greenburg, on the opposite side of the Bronx river. After the skirmish of Harlem heights, Sept. 10, 1776, in which the British were repulsed with considerable loss, Gen. Howe, finding that the American position on the heights was too strong to be carried, attempted to flank it by landing troops on the shore of Westchester co., and by a dexterous manœuvre hemming in the Americans upon the highlands at the north of the island. Gen. Washington perceived his design, and sending strong detachments to oppose their landing and occupy the coast, and a smaller force to White Plains, or rather to the W. side of the Bronx, to throw up fortifications, he commenced moving on Oct. 17 along the line of the Bronx, forming a series of intrenchments from Williams's bridge to White Plains. The British meanwhile had succeeded in effecting a landing on the coast near Pell's and Throck's points, and had moved up toward the Bronx. Skirmishes took place between the two armies, resulting generally in favor of the Americans. On Oct. 21 Gen. Washington established his head-quarters at White Plains, where the American troops were fortifying their position. As the British approached, Gen. Washington called in all his detachments, and abandoning his positions along the lower waters of the Bronx established his whole force in the immediate vicinity of White Plains. On the evening of Oct. 27 Col. Haslett with about 1,600 American troops had taken possession of Chatterton hill, a commanding eminence on the W. side of the Bronx; and on the morning of the 28th, reënforced by a small additional force under Col. McDougall and 2 pieces of cannon under command of Capt. Alexander Hamilton, he fortified his position as well as time would allow. On the morning of that day Gen. Howe advanced with his forces in two columns, numbering about 13,000 men, upon the American army posted along the Bronx. Perceiving the importance of the position on Chatterton hill, and regarding it as the only assailable point of the American army, Gen. Leslie was sent with a strong detachment to cross the Bronx and attack it in front, while Col. Rall with a Hessian regiment was ordered to cross the river a quarter of a mile below and attack Col. Haslett in flank. The hill was carried with great difficulty, the Americans retreating in good order and without being pursued. The British troops rested that night on Chatterton hill. The next day, Oct. 29, a skirmish took place between the two armies; but Howe, finding the Americans still too strongly posted to be attacked with safety, waited for reënforcements. These arrived on the evening of the 30th, but a storm coming on, the Americans took advantage of it and withdrew to the still stronger position of Newcastle, 2 miles above, which they had previously fortified. Afraid to attack them in this position, Howe fell back to the junction of the Harlem and Hudson rivers, and encamped on Fordham heights; and Washington withdrew his army leisurely into New Jersey and made his head-quarters at Hackensack. The loss of the Americans in the battle of White Plains and the skirmish of the succeeding day was nearly 300 in killed, wounded, and prisoners, and that of the British about the same.

WHITE RIVER, a river of Arkansas and Missouri, which rises in the Ozark mountains in the N. W. part of the former state by three separate streams, uniting a few miles E. of Fayetteville. From this point it flows N. N. E. into Missouri, and after making a circuit of nearly 100 m. returns into Arkansas, flowing thence S. E. to its junction with the Black river, and receiving in its course the North fork of White river on its left bank and the Buffalo fork on its right. After its junction with the Black it turns southward, and enters the Mississippi 15 m. above the mouth of the Arkansas, with which it also unites by an arm near the same point. Its whole course is not less than 800 m. It is navigable to the mouth of Black river, 350 m., at all stages of water, and during most of the year to Batesville, 30 m. further. It is seldom obstructed by ice, and flows through a fertile country well adapted to the culture of maize and cotton.

WHITE SEA (Russ. *Beloe More*), a large gulf or branch of the Arctic ocean, which penetrates far into N. W. Russia, between lat. 63° 48′ and 68° 50′ N. It is nearly semicircular in form, and has a length from N. E. to S. W. of about 360 m., while its average breadth from N. W. to S. E. is about 60 m. At its entrance, between Kanin Nos and Sviatoi Nos, it is about 100 m. in width; but where it turns to the S. W. it has contracted to about 40 m. It forms 4 large gulfs or bays, viz.: that of Mezen on the N. E., that of Dwina or Archangel on the S., that of Onega on the S. W., and the deep inlet extending, with a mean width of 25 m., a distance of 100 m. into Lapland on the N. W., called the gulf of Kandalask. Its area is estimated at 44,000 sq. m. It has numerous small islands, and two of considerable size, that of Solovetz, in the Solovetzkoi group, at the entrance of the gulf of Onega, and Moryovetz, at the entrance of the bay of Mezen. The sea has bold and rocky shores, and deep waters, except in the gulf of Dwina, which is obstructed by a sand bank and is for most of its extent shallow. The Mezen, N. Dwina, Onega, Vig, Kem, Kamienna, and many smaller streams discharge their waters into the White sea. Its only large port is that of Archangel on the gulf of Dwina. The navigation is open for 5 or 6 months of the year. Fish are abundant. The white whale, or white fish of the whalemen, seal, salmon, cod, herring, &c., are caught in large numbers; and from Archangel and the other towns on the coasts, vessels are sent to Spitzbergen, Nova Zembla, and the coasts of the Polar sea in pursuit of whales, seals, and walruses.—The White sea first became known to English navigators through Richard Chancellor, commanding a ship in the unfortunate squadron of Sir Hugh Willoughby in 1553, who landed on the shores of the gulf of Dwina.

WHITE SULPHUR SPRINGS, a post village of Greenbrier co., Va., containing the principal mineral spring of Virginia, on Howard's creek, 205 m. W. from Richmond, and 9 m. E. from Lewisburg, the county seat. The first use of the waters by the whites is said to have been in 1778, and in 1820 the spring had become a fashionable resort. Buildings have now been erected capable of receiving 1,500 guests. The spring is in the lowest part of a beautiful valley, and is covered by a dome supported by 12 Ionic columns and crowned by a statue of Hygeia. Its elevation is about 2,000 feet above tide water, and its temperature 62° F. It yields about 30 gallons per minute. The solid ingredients of the water are sulphate of lime, sulphate of soda, sulphate of magnesia, carbonate of magnesia, carbonate of lime, chloride of calcium, chloride of sodium, sulpho-hydrate of sodium, peroxide of iron, iodine, phosphate of lime, precipitated sulphur, and a small quantity of organic matter; the gaseous ingredients are carbonic acid, sulphuretted hydrogen, oxygen, and nitrogen. It is said to resemble the Sharon springs of Schoharie co., N. Y., in its chemical and medicinal properties. The waters are considered efficacious in dyspepsia, jaundice, and liver diseases generally, gout, rheumatism, diseases of the skin and kidneys, &c.—At distances from 22 to 42 m. from this spring are the Red, Salt, and Blue Sulphur springs, at each of which there are rooms for about 400 guests. The water of the Red Sulphur springs has a temperature of 54° F., and is very strongly charged with sulphuretted hydrogen. The Salt Sulphur spring contains no chloride of sodium, but a larger proportion of sulphate of soda than the other springs. The Blue or Gray Sulphur possesses valuable diuretic properties.

WHITE SWELLING, the name popularly given to a chronic inflammation of the joints occurring in scrofulous subjects. The complaint appears sometimes to originate in a slight injury, a bruise or a sprain; sometimes no cause can be assigned for its occurrence. The joint slowly becomes stiff and swollen; for a long time it is painful only on being moved, and the patient keeps it as quiet as possible in a posture that relaxes as far as may be the surrounding muscles and tendons, and this is generally in a semi-flexed position. The swelling is caused largely by the parts exterior to the joint becoming thickened and infiltrated with plastic and fatty matters. It comes on very slowly, and as it supervenes the prominences of the bones are lost, and the joint becomes rounded and has a doughy or semi-elastic feel. The appearance of the skin, which for a long time preserves its natural color, gives the disease its popular name. The swelling, considerable in itself, seems greater from the wasting of the rest of the limb. The disease has a great tendency to run on to suppuration, which takes place both within the joint and around. This is rapidly followed by hectic fever, and often by the development of tubercles in the lungs. The general treatment consists in hygienic measures, in a generous diet, and in the use of iron, cod liver oil, phosphoric acid, and iodine. Locally, the chief indication to be fulfilled is to keep the joint in a state of perfect rest, and this is best done by the use of properly adjusted splints or the employment of the starch bandage. When the inflammation has entirely subsided, friction and stimulating liniments may be employed to remove the thickening and stiffness which remain.

WHITEBAIT (*clupea alba*, Yarr.), a small fish of the herring family, in great repute with London epicures. It has teeth on the palate and pterygoid bones, on the vomer, and on the tongue, for which reason Valenciennes has established for it the genus *rogenia;* the scales are very soft, small, and thin. It is from 3 to 6 inches long according to age, pale ashy green above, sides and lower parts unspotted white at all seasons. It is a marine species, ascending the Thames to deposit its spawn in the spring, and going up as far as Blackwall and Woolwich; the fishery begins in April and continues to September, and is prosecuted by means of nets with a mouth of 3 feet square and very small tail, sunk 4 or 5 feet below the surface in the tideway. It was formerly supposed to be the young of the shad or sprat, and laws are even now in existence prohibiting its capture under severe penalties. Throughout the summer whitebait dinners are very common at Greenwich and Blackwall, the fish being caught in abundance at every flood tide; every year there is a ministerial whitebait dinner at Greenwich, just before the prorogation of parliament, usually between Aug. 1 and Sept. 10. Fried in batter or crumbs, they are delicious; the fish served are the young of the year, adults, 6 inches long, being taken in winter in the frith of Forth and off the coasts of Kent and Essex. Their food seems to consist of minute crustaceans.

WHITEFIELD, George, founder of the Calvinistic Methodists, born in Gloucester, England, Dec. 16, 1714, died in Newburyport, Mass., Sept. 30, 1770. He was the son of an innkeeper and the youngest of 7 children. He lost his father in infancy, and, after passing some years at a grammar school, was taken home at the age of 15 to help his mother about the inn. He seems to have been from boyhood of a serious turn of mind, though he describes his youth as being exceedingly vicious. "From my cradle to my manhood," said he, "I can see nothing in me but a fitness to be damned." Nevertheless, while he was washing mops and cleaning rooms in "his blue apron" at the Gloucester inn, he composed sermons, and fasted twice a week for 36 hours together. At the age of 18, having fitted himself for the university by another period at school, he entered Pembroke college, Oxford, as a servitor. There he formed an intimacy with Charles Wesley, and became an enthusiastic member of the "holy club," in which the denomination of the Methodists took its rise. He was at first disposed toward quietism, but the Wesleys rescued him, as he says, from his "various and pitiable state," and he immediately flew to the opposite extreme of asceticism, spending "whole days and weeks lying prostrate on the ground in prayer," fasting inordinately, and striving to teach himself humility by wearing dirty shoes and patched breeches. One effect of these practices was to throw him into a profound and morbid melancholy, from which he suddenly recovered after a long sickness, brought on by the same self-imposed rigors. At the end of 7 weeks' illness "the weight of sin went off," and he returned home to regain his health. During this visit he was ordained deacon by the bishop of Gloucester (June, 1736), and the next Sunday preached with such extraordinary effect that a complaint was made to the bishop that he had driven 15 persons mad. "I only hope," was the bishop's reply, "that the madness will continue till the next sabbath." Returning to Oxford, he took his degree of B.A., and in 1737 went to London to preach at the tower chapel. He afterward filled for a few months a curacy in Hampshire, and in Dec. 1737 was induced by letters from John Wesley in Georgia to embark for America. Wesley had left the colony however before Whitefield arrived, and in Sept. 1738 the latter set sail again for England to collect funds for a proposed orphan asylum near Savannah. Soon after he reached home the two friends entered in earnest upon the missionary career from which the origin of Methodism is dated. Whitefield set the example of preaching in the open air in a field near Bristol (Feb. 1739). From this time he travelled continually from place to place, preaching to enormous crowds of people with the most marvellous results. All classes of persons came to hear him. At one time he is said to have addressed as many as 60,000 people at Moorfields. In Aug. 1739, he set out on another visit to America, landed in Philadelphia, passed through New Jersey, spent a week in New York, and then went to his orphan house in Georgia. He afterward visited New England, preached to 20,000 listeners on Boston common, and in Jan. 1741 returned to England. Immediately on his arrival he had a quarrel with Wesley on the subject of predestination, Wesley holding to Arminian sentiments, and Whitefield espousing the doctrines of Calvin. So much personal ill feeling was aroused that Whitefield preached against his friend by name, but they were soon reconciled. Doctrinally however they never came to an agreement, and the Calvinistic and Wesleyan Methodists have ever since remained distinct bodies. (See Methodism.) The countess of Huntingdon about this time became a disciple of Whitefield, and invited him to preach at her residence, where Chesterfield, Hume, and Bolingbroke were among his hearers. In 1744 he made a third voyage to America, landing at York, Me. He met at first with great opposition in New England, Harvard college issuing a "testimony" against him, and many of the clergy being equally hostile. Before he set out for Georgia, however, he had converted 20 pastors. In 1748 he went to the Bermudas for his health, and thence returned to England. After successful tours in Ireland and Scotland, he was again in Georgia and South Carolina in 1751–'2, and in 1754 made a fifth voyage thither, accompanied by a number of children for his orphan house. His tour extended from Georgia to New Hampshire, and he spoke of it as the most important of all his expeditions. In 1757 he was assaulted by a mob in Dublin, and severely wounded with stones. He made his sixth American tour in 1763–'5, and started on a seventh in Sept. 1769, taking affectionate leave of Wesley in a farewell letter. He preached for two hours at Exeter, N. H., the day before his death, and on his arrival at Newburyport the same evening made an address to the crowd that came to meet him. He died of asthma, and was buried beneath the pulpit of the Federal street church in Newburyport. Like Wesley he was unhappily married. During his second American journey he wrote to a friend asking for his daughter in marriage, but blessed God, in the letter, that his heart was "free from that foolish passion which the world calls love." The proposal was declined, and in 1741 he married a widow, whose death in 1768, according to his friend Winter, "set his mind much at rest." She bore him a son who died an infant.—Whitefield was tall in person; his features were regular, and his eyes small, blue, and luminous; one of them had a slight cast. His voice was marvellously rich, sweet, and sonorous. His eloquence has rarely been surpassed. It was a natural gift improved by diligent study, and Garrick said that each repetition of the same sermon showed a constant improvement, as many as 40 repetitions being required before the discourse reached its full perfection. According to the same authority, he could make his audience weep or tremble merely by varying his pronunciation of the word Mesopotamia. His style was severely simple, and in his printed sermons seems even meagre. He never fell into vulgarity, but delighted in odd illustrations, anecdotes, local allusions, colloquial phrases, and the language of the common people. Sometimes he stamped loudly and passionately, and he was frequently so much overcome that he required some time to compose himself. He seldom preached without weeping. His gestures and the play of his features were full of dramatic power. A collection of his sermons, tracts, and letters was published in London in 1771 (6 vols. 8vo.), and his journals were printed, like Wesley's, during his lifetime, a second and corrected edition of them appearing in 1756.—See Robert Philip, "Life and Times of Whitefield;" John Gillies, "Memoirs of the Life of the Rev. George Whitefield" (8vo., London, 1772); and the Rev. Abel Stevens, "History of the Religious Movement of the 18th Century called Methodism" (3 vols. 12mo., New York, 1859–'62).

WHITEHALL, a township and village of Washington co., N. Y., situated at the extremity of Lake Champlain; pop. in 1860, 4,862. It is connected with Troy by the Champlain canal, and by the Rensselaer and Saratoga, and Saratoga and Whitehall railroads. The village is situated at the entrance of Wood creek and Pawlet river into the lake, and several steamboats ply daily during the summer between it and the other lake ports. The falls in the streams furnish ample water power, which is employed in the manufacture of timber, flour, machinery, woollen goods, carpets, and sashes and blinds. There is also a considerable business done in the construction of boats, sailing vessels, and steamboats for the lake trade. Whitehall has 7 churches (2 Methodist, and 1 each Baptist, Congregational, Episcopal, Presbyterian, and Roman Catholic), 17 public schools, and one academy.—The town was first settled in 1761 by Major Philip Skene, a British half-pay officer, who gave it the name of Skenesborough. During the revolutionary war his house was used by the colonists as a fort, but was blown up by the garrison after Fort Ticonderoga had fallen into the hands of the British. The name of the place was changed to Whitehall in 1786. In the war of 1812 it was an important military depot. The first steamboat which plied on the lake was launched here in 1809. The Champlain canal was constructed from this point to Fort Edward in 1819, and completed to Troy in 1824.

WHITEHAVEN, a parliamentary borough, seaport, and market town of Cumberland, England, on a small creek of the Irish sea, 38 m. S. W. from Carlisle; lat. 54° 33′ N., long. 3° 35′ W.; pop. in 1861 (of the town), 18,842. It is built at the foot of high hills, has a good harbor, and enjoys an extensive commerce, the principal articles of export being coal, iron, and iron ore. The coal mines extend under the town and for more than 2 miles under the sea, being the deepest known in the world. In 1859–'60 the exports by water included 195,508 tons of coal and 198,397 tons of iron, beside about as much more sent by railway.

WHITEHEAD, Paul, an English poet, born in London, Feb. 6, 1710, died there, Dec. 30, 1774. He was apprenticed to a mercer of London, but, not liking trade, became a student of law at the Middle Temple, and in 1735 obtained a small competence by marriage. In 1733 he published "State Dunces," a satire upon the ministry, which gained him the favor of the opposition, then headed by the prince of Wales. Having joined Fleetwood, the manager of Drury Lane theatre, in a bond for £3,000, he refused to pay when called upon to do so, and in consequence underwent a long confinement in the Fleet prison. In 1739 another satire from his pen appeared under the title of "Manners," and was so personal in its attacks that Dodsley, his publisher, was imprisoned, and he himself only escaped the same penalty by flight. Subsequently he became a literary hanger-on of Bubb Dodington, and in 1744 published a satire upon boxing under the title of the "Gymnasiad," and about the same time another upon the government entitled "Honour." Sir Francis Dashwood, afterward Lord de Despenser, obtained for him the situation of deputy treasurer of the chamber, which office, yielding about £800 a year, he held until his death. He was one of the party engaged in the scenes of debauchery and blasphemy enacted at Medmenham abbey, the infamous revelries of which were exposed by Wilkes in revenge for the prosecution brought against him by some of his noble associates in debauchery, for the "Essay on Women." Beside the works above mentioned, he wrote some songs and epigrams, and an "Epistle to Dr. Thomson" (1745). His collected works, which were of merely temporary interest, were published in 1777, with an account of his life, by Capt. Edward Thomson.

WHITEHEAD, William, an English poet, born in Cambridge in 1715, died in London, April 14, 1785. He was the son of a baker in his native place, but was educated at Winchester school, in 1735 was admitted to Clare hall, Cambridge, and in 1742 became fellow of his college. In 1741 he published an "Epistle on the Danger of Writing Verse," after the manner of Pope. In 1745 he became tutor to the son of the earl of Jersey, and he now wrote his tragedy of "The Roman Father," founded partly upon the *Horace* of Corneille, which was brought out at Drury Lane in 1750, and long held possession of the stage. It is considered his best production. He wrote another tragedy called "Creüsa, Queen of Athens," brought out in 1754, and in that year accompanied his pupil and Viscount Nuneham to the continent. While absent he was appointed to the place of secretary and registrar to the order of the bath, and in 1758 was made poet laureate. In 1762 he produced a comedy entitled "The School for Lovers," and in 1770 a farce called "The Trip to Scotland." He wrote numerous epistles, essays, odes, and other poems, and his productions were twice collected and printed under his own supervision (1754 and 1774). His friend Mason published a third edition in 1788, with a biographical account of the poet.

WHITELOCKE, Bulstrode, an English statesman, born in London, Aug. 2, 1605, died at Chilton, Wiltshire, Jan. 18, 1676. He was the son of Sir James Whitelocke, an English legal author and judge of the common pleas, was educated at St. John's college, Oxford, entered the Middle Temple, and in 1640 was elected a member of the long parliament from Great Marlow in Buckinghamshire. In that body he acted a conspicuous part, but his course was very vacillating, probably from a disinclination to support extreme measures against the crown, although opposed to the tyrannical exercise of the royal authority. He was made chairman of the committee for managing the impeachment of the earl of Strafford. On the militia question he maintained that the power of raising troops lay neither in the king nor in the parliament, but in both jointly. In 1642 he was made deputy lieutenant of Buckinghamshire and Oxfordshire, and with Hampden dispersed the commissioners of array assembled at Watlington. In Nov. 1642, he was present at the defence of Brentford; subsequently was one of the commissioners sent to Oxford to treat of peace; and was one of the lay members of the Westminster assembly, where he opposed the adoption of the Presbyterian form of church government. In 1644 he was appointed governor of Windsor castle. In 1645 he opposed the self-denying ordinance, became one of the commissioners of the admiralty, and was one of the commissioners at Uxbridge to negotiate with Charles. In Dec. 1646, he opposed the disbanding of the army, and favored the ordinance which deprived parliament of its arbitrary power. He refused to join in drawing up the charges against Charles, though named one of the members for that purpose, and disapproved of the proceedings at the king's trial. Though his refusal to support Cromwell in all his measures led the latter to look upon him somewhat coolly, he was afterward for a time one of the commissioners of the great seal, and held several other offices, and in Sept. 1653 was appointed ambassador to Sweden, where he made a satisfactory treaty. In June, 1654, he returned, and in August was elected to Cromwell's second parliament from Buckinghamshire, and on its dissolution was made commissioner of the treasury, and subsequently one of the council of trade. In the third parliament he acted part of the time as speaker, and attended the inauguration of the protector in June, 1657. Applying for the provostship of Eton college, and not receiving it, he went for a time into retirement, but in December was called by Cromwell to his house of peers, and on Aug. 21, 1658, the protector created him a viscount, which honor he refused. After the death of Cromwell he was made by his son Richard one of the commissioners of the great seal, and after the displacement of Richard he was named member of the council of state. As president of this body he repressed the insurrection of Sir George Booth, opposed the designs of Monk, and on the reassembling of the long parliament gave up the great seal, and retired into the country. At the restoration his name was inserted in the act of pardon and oblivion by a small majority in the house of commons. He wrote valuable and interesting "Memorials of the English Affairs from the Beginning of the Reign of King Charles the First to the Happy Restoration of King Charles the Second" (1682, enlarged in 1732; new ed., 4 vols. 8vo., Oxford, 1853). He also wrote a "Journal of the Swedish Embassy in 1653 and 1654 from the Commonwealth of England" (1772; new ed., 1855); and "Memorials of the English Affairs from the supposed Expedition of Brute to this Island, to the End of the Reign of King James the First," published in 1709 by William Penn. Several of his speeches are to be found in his "Memorials."

WHITESIDES, a N. W. co. of Illinois, separated from Iowa by the Mississippi river and intersected by Rock river; area, 730 sq. m.; pop. in 1860, 18,740. The surface is level and diversified by prairies and woodland, and the soil is very fertile. The productions in 1850 were 149,661 bushels of wheat, 211,027 of Indian corn, 70,654 of oats, 118,963 lbs. of butter, and

8,950 tons of hay. There were 4 churches, and 1,364 pupils attending public schools. The county is intersected by the Fulton and Iowa railroad. Capital, Sterling.

WHITEWEED. See OXEYE.

WHITEWOOD. See TULIP TREE.

WHITFIELD, or WHITEFIELD, a N. W. co. of Georgia, bordering on Tennessee, and bounded E. by the Connasauga river; area, about 700 sq. m.; pop. in 1860, 10,047, of whom 1,732 were slaves. The surface is mostly mountainous, and much of the soil fertile. Iron ore and some other minerals are found. The county is intersected by the Atlantic and western and the East Tennessee and Georgia railroads. It was organized in 1852 out of parts of Murray and Walker counties. Capital, Dalton.

WHITGIFT, JOHN, an English prelate, born in Great Grimsby, Lincolnshire, in 1530, died at Lambeth, Feb. 29, 1604. He manifested almost from boyhood a decided aversion to the Roman Catholic faith, was educated at Pembroke hall, Cambridge, of which Ridley was then master, and during the reign of Mary was in great danger on account of his opinions. After the accession of Elizabeth he entered into holy orders (1560), and was made chaplain to Cox, bishop of Ely; subsequently he succeeded Hutton as Lady Margaret's professor of divinity, in which office he gained a high reputation by his lectures on the book of Revelations and the Epistle to the Hebrews. In 1567 he was elected master of Pembroke hall. Soon afterward the queen made him her chaplain and master of Trinity college, Cambridge, and the same year he also became regius professor of divinity. In 1571 he was vice-chancellor of the university, and in 1572 prolocutor to the lower house of convocation. About this time, at the desire of Dr. Parker, archbishop of Canterbury, he wrote an answer to a work entitled "An Admonition to the Parliament," which had bitterly assailed the established church. His reply was attacked by Cartwright, and Whitgift rejoined in his "Defence." He was now made dean of Lincoln, and in 1576 bishop of Worcester, and, having also received a civil commission as vice-president of the marches of Wales, made constant use of both the temporal and spiritual powers to put down Roman Catholicism and Puritanism within the limits of his jurisdiction. In 1583 he became archbishop of Canterbury. He soon promulgated articles for the observance of discipline, one of which exacted from every clergyman in the church a subscription to the three points of the queen's supremacy, the lawfulness of the common prayer and ordination service, and the truth of the whole 39 articles. Making use of the court of high commission created under the act of supremacy passed at the beginning of Elizabeth's reign, he removed from stations in the church all schismatics or noncomformists. In 1585 the star chamber, of which he was a member, at his instigation passed ordinances for the regulation of the press, by which no one was allowed to print except in London, Oxford, and Cambridge; the number of printers was to be determined by the ecclesiastical commissioners; none but a few special printers were to be suffered to print any book, matter, or thing whatsoever until it should be perused and allowed by the archbishop of Canterbury and the bishop of London; and every one selling books contrary to the intent of the ordinance was to be imprisoned for 3 months. In 1586 he was sworn of the privy council, and framed the statutes of cathedral churches; in 1587 he refused the chancellorship, recommending for the place Sir Christopher Hatton; and in 1595, on occasion of the controversy on predestination, he in concert with others of the clergy drew up the celebrated Lambert articles. At the conference held at Hampton Court in 1604, he was appointed member of a commission for regulating the affairs of the church. His life was written by Strype and by Sir George Paule.

WHITING. See HAKE, and POLLOCK.

WHITLEY. I. A S. E. co. of Kentucky, bordering on Tennessee, and intersected by the Cumberland river; area, 600 sq. m.; pop. in 1860, 7,762, of whom 183 were slaves. The surface is hilly and broken. The productions in 1850 were 3,609 bushels of wheat, 312,918 of Indian corn, 52,678 of oats, 135,361 lbs. of butter, 11,674 of tobacco, and 48,889 of flax. There were 42 churches, and 1,197 pupils attending public schools. Iron ore and bituminous coal are abundant. The falls of the Cumberland river are in this county. Capital, Williamsburg. II. A N. E. co. of Indiana, intersected by Eel river; area, 324 sq. m.; pop. in 1860, 10,731. The surface is undulating, but there are several prairies; the soil is very fertile. The productions in 1850 were 46,669 bushels of wheat, 126,049 of Indian corn, 20,040 of oats, and 10,269 lbs. of wool. The Pittsburg, Fort Wayne, and Chicago railroad passes through the county. Capital, Columbia.

WHITLOW, or FELON (*paronychia*), an abscess occurring on the fingers, attended with great pain and inflammation, commencing in, if not confined to, the terminal joint. The cutaneous or superficial whitlow consists of an inflammation of the skin of the last phalanx, with burning pain and effusion of a serous or bloody fluid raising the cuticle into a blister; when under the skin, and especially when about the nails, there is great pain and throbbing until the pus, which is almost sure to form, is let out either spontaneously or by incision, attended often with loss of the nails. Supposing all foreign bodies to be removed, leeches, fomentations, and opiated poultices may be applied; and if these fail, relief may be obtained by a free incision. A painful and tender state of the tip of the fingers may be remedied by painting them with nitrate of silver. In the tendinous form or thecal abscess, where the inflammation is within the sheaths of the tendons, the pain is much more severe, and the pus, from inability to escape through the fibrous tissues, burrows upward along the sheaths into the palm of the hand, and even to the forearm and arm, producing severe constitutional symptoms and irritative fever, sometimes requiring amputation to save life. Free and early incisions are the best remedy, the system at the same time being supported by stimulants and tonics. With the best treatment, however, the finger is often rendered stiff and useless, with the loss of one or more of the joints from consequent necrosis. Punctured and poisoned wounds are the most frequent causes of tendinous whitlow. When the constitution is impaired, aperients and alteratives are important aids in the treatment. Aconite and morphine will allay the pain and inflammation; while phosphoric acid will more quickly restore the strength of the patient than quinine or iron.

WHITMAN, Sarah Helen (Power), an American poetess, born in Providence, R. I., in 1813. She was married in 1828 to Mr. John Winslow Whitman, a lawyer of Boston, since whose death in 1833 she has resided in Providence. She published in 1853 "Hours of Life and other Poems," which were received with great favor, and has also written other lyrics, a number of elaborate critical articles on European writers, and a defence of Edgar Allan Poe entitled "Edgar Poe and his Critics" (New York, 1859).

WHITNEY, Eli, an American inventor, born in Westborough, Mass., Dec. 8, 1765, died in New Haven, Conn., Jan. 8, 1825. He early manifested a remarkable mechanical genius, and partly by industry as an artisan and partly by teaching obtained the means of defraying his college expenses. He was graduated at Yale college in 1792, and went the same year to Georgia, under an engagement as a private teacher. Finding, on arriving there, that his place had been supplied, he accepted the invitation of the widow of Gen. Greene to make her house his home while studying law. Several little contrivances made for Mrs. Greene's convenience had given her a high opinion of his inventive powers; and when some gentlemen who were visiting her lamented that there could be no profit in the cultivation of the green seed cotton (the best variety), owing to the great difficulty of separating it from the seed, she advised them to apply to Mr. Whitney, "who," she said, "could make any thing." At this time a pound of green seed cotton was all that a negro woman could clean in a day. Whitney had never seen either the raw cotton or the cotton seed. With some difficulty, as it was not the time of year for the cultivation of cotton, he procured some from which the seeds had not been removed, and commenced working out his idea of the cotton gin. For some months he was engaged in constructing his machine, in which he met with great difficulties, being compelled to draw his iron wire, as he could obtain none in Savannah, and to manufacture his own tools. Mrs. Greene and Mr. Miller, who afterward became Whitney's partner, were the only persons permitted to see the machine; but rumors of it had gone through the state, and before it was quite finished the building in which it was placed was broken open by night, and the machine carried off. Before Mr. Whitney could complete his model and obtain his patent, a number of machines based on his invention had been surreptitiously made, and were in operation. Mr. Miller, who had some property, formed a partnership with him in May, 1793, and Whitney went to Connecticut to manufacture the machines. He was involved in continual troubles by infringements of his patent. In Georgia it was boldly asserted that Whitney was not the inventor, but that some persons in Switzerland had invented something like it; and the substitution of teeth cut in an iron plate, instead of wire, was claimed as superseding his invention. In South Carolina the legislature granted him $50,000 for his invention, which was finally paid after vexatious delays and lawsuits. North Carolina allowed a percentage for the use of each saw for 5 years, and collected and paid it over to the patentees in good faith; and Tennessee promised to do the same thing, but afterward rescinded her contract. For years, amid accumulated misfortunes, lawsuits wrongfully decided against him, the destruction of his manufactory by fire, the industrious propagation of the report that his machine injured the fibre of the cotton, the refusal of congress, on account of the opposition of southern members, to allow the patent to be renewed, and the death of his partner, Mr. Whitney struggled on until, convinced that he should never receive a just compensation for his great invention, he turned his attention to the manufacture of firearms for the government, from which he eventually reaped a fortune. He was the first manufacturer of firearms who carried the division of labor to the extent of making it the duty of each workman to perform by machinery but one or two operations on a single portion of the gun, and thus rendered all the parts adapted to any one of the thousands of arms in process of manufacture at the same time. His first contract with government, in 1798, was for 10,000 stand of arms to be delivered in two years; but owing to the necessity of inventing and perfecting all the machinery for their manufacture, the whole number were not delivered till 8 years from the time of making the contract. At this time, however, he had so far perfected his machinery at Whitneyville, Conn., that he immediately entered into contracts for 30,000 stand more, which he was able to furnish at the time agreed upon. The application of several of his inventions to other manufactures of iron and steel added to his reputation, though but little to his wealth. (See Cotton, vol. v. p. 762.)

WHITNEY, William Dwight, an American orientalist, born in Northampton, Mass., Feb. 9, 1827, was graduated at Williams college in

1845, and spent 3 years in the study of Sanscrit at Berlin with Dr. A. Weber, and at Tübingen with Professor R. Roth. During his residence at Berlin, he transcribed with his own hand, from the Sanscrit MSS. in the royal library, the *Atharva-Veda*, and afterward collated the manuscripts of the poem in Paris and England, and in connection with Professor Roth published the *Atharva* text (8vo., Berlin, 1856). In 1853 he returned home, and in 1854 was appointed professor of Sanscrit in Yale college, and became an active officer of the American oriental society, in which he has held the office of corresponding secretary since 1857. To various periodicals, but chiefly to the "Journal of the American Oriental Society," he has contributed papers on oriental and philological subjects. Among the most important of these may be mentioned a translation, with copious notes, of the *Surya Siddhanta*, an ancient Hindoo treatise of astronomy, in which he made an elaborate examination of the relations of the ancient Hindoo and Greek astronomical science. This was also issued as a distinct volume. His publication of the *Atharva-Veda Pratiçakhya*, text, translation, and commentary, also deserves notice, as well as his reviews of Müller's "Ancient Sanscrit Literature," and Lepsius's phonetic alphabet. He is mentioned by Professors Böhtlingk and Roth as one of their collaborators in the preparation of the Sanscrit dictionary now publishing at St. Petersburg. He has contributed several articles on oriental philology and literature to this cyclopædia. The honorary degree of Ph.D. was conferred upon him by the university of Breslau in 1861.

WHITSUNTIDE. See PENTECOST.

WHITTEMORE, AMOS, an American inventor, born in Cambridge, Mass., April 19, 1759, died in West Cambridge, Mass., in April, 1828. He was the son of a farmer, worked for some years as a gunsmith, and finally formed a copartnership with one of his brothers and several other persons for the manufacture of cotton and wool cards. He had not been long engaged in this business before he invented a machine for puncturing the leather and setting the wires, a work previously performed by hand. In experimenting for this invention he met with the greatest difficulty in bending the wires to a given angle after they were finally fastened in the leather, and was on the point of giving up the attempt when in a dream he discovered the method of effecting it. The invention was patented in the United States in 1797, and Whittemore went to England to secure his rights there, but was unsuccessful. In the United States the patent was sold for $150,000; but afterward his brother Samuel Whittemore repurchased it, and carried on the business. Amos Whittemore devoted his last years to the invention of an orrery, in which every planet was to describe its own orbit, but did not live to complete it.

WHITTEMORE, THOMAS, D.D., an American clergyman, born in Boston, Jan. 1, 1800, died in Cambridge, Mass., March 21, 1861. He was apprenticed successively to a morocco dresser, a brass founder, and a boot maker, and finally studied for the ministry under the Rev. Hosea Ballou. In April, 1821, he was settled as a Universalist minister at Milford, Mass., but after remaining there one year he removed to a church in Cambridgeport. He continued in the pastoral relation 9 years, when he resigned, but resided in Cambridge for the remainder of his life. Early in his ministry he was joint editor of the "Universalist Magazine," and in 1828 he commenced the publication of the "Trumpet," a Universalist newspaper in Boston, of which he was sole editor and proprietor for nearly 30 years. He was also president of the Cambridge bank and of the Vermont and Massachusetts railroad, and represented Cambridge repeatedly in the state legislature. In 1830 he published "A History of Universalism," which he subsequently enlarged, the first volume of a new edition, devoted to the history of Universalism in Europe, appearing in 1860, and the second being at the time of his death nearly ready for the press. His other works are: "Notes and Illustrations of the Parables" (Boston, 1832); "Songs of Zion" (1836); "Plain Guide to Universalism" (1839); "The Gospel Harmonist" (1841); "Conference Hymns" (1842); and "Sunday School Choir" (1844).

WHITTIER, JOHN GREENLEAF, an American writer, born in Haverhill, Mass., in Dec. 1807. His parents were members of the society of Friends. His early education was acquired at home, where until his 18th year he worked on the farm. He then spent two years in study at the town academy, and in 1829 became editor of the "American Manufacturer" at Boston, a paper devoted to the maintenance of the tariff, then threatened with reduction. In 1830 he succeeded George D. Prentice as editor of the "New England Weekly Review" at Hartford, and wrote a brief memoir prefixed to a collection of Brainard's poems. This was not his only early attempt at prose authorship. The "Legends of New England" (Hartford, 1831) was a collection of some of those early colonial and Indian traditions from which he afterward drew the subjects of many of his poems. His "Mogg Megone," "Bridal of Pennacook," "Cassandra Southwick," and "Mary Garvin" all indicate a thorough familiarity with these materials for poetic pictures. He soon returned to the old homestead and the pursuits of the farm, diversified by two years' experience (1835-'6) as a member of the Massachusetts legislature. In 1833 he published an essay entitled "Justice and Expediency, or Slavery considered with a View to its Abolition." In common with the Friends generally, Mr. Whittier held slavery in abhorrence, and the opprobrium then showered upon the abolitionists called forth his strongest sympathies in their behalf. In 1836 he became identified with them, and was appointed secretary of the American anti-slavery society; and soon afterward he went to Philadelphia, where for some years he edited the "Pennsylvania Freeman," one of the organs of that society. Several of his anti-slavery poems published about this time attracted attention from their earnestness and vigor, blended with deep poetic feeling; some of these were afterward collected in a volume entitled "The Voices of Freedom." In 1840 Mr. Whittier established himself at Amesbury, Mass., where he has since resided, engaged in literary pursuits. For several years he was corresponding editor of the Washington "National Era." He has been a prolific writer both in prose and poetry. In the former, beside the "Legends of New England" already mentioned, and "Leaves from Margaret Smith's Journal" (1836), he published in 1850 "Old Portraits and Modern Sketches," a series of biographical essays, and in 1854 "Literary Recreations." His poems were collected in 1850, since which time he has published "Songs of Labor and other Poems" (Boston, 1851); "The Chapel of the Hermits and other Poems" (1853); "The Panorama and other Poems" (1856); and "Home Ballads and Poems" (1859).

WHITTINGHAM, William Rollinson, D.D., bishop of the Protestant Episcopal church in Maryland, born in the city of New York, Dec. 2, 1805. He was graduated at the general theological seminary in 1825, admitted to the ministry in 1827, and became rector of St. Luke's church, New York, in 1831. His health having failed, he went to the south of Europe in 1834. The next year he was elected to the chair of ecclesiastical history in the general theological seminary; and in 1840 he was elected bishop of Maryland, and was consecrated in Baltimore, Sept. 17. Bishop Whittingham has been actively engaged in the various duties of his office, and has made valuable contributions to religious literature. Beside the "Family Visitor," "Children's Magazine" (both monthly), and the "Churchman" (weekly), he edited, with notes, "The Parish Library" (13 vols.), a collection of standard works for family and religious reading. He has also published occasional sermons, and other works. During the existing civil war he has remained loyal to the national government, against a large majority of his clergy.

WHITWORTH, Charles, baron, an English diplomatist, born at Aldbaston, Staffordshire, in 1670, died in London in 1725. He was appointed in 1702 resident near the diet at Ratisbon, in 1704 and again in 1710 envoy to the court of Russia, in 1714 plenipotentiary to the diet of Augsburg and Ratisbon, in 1716 envoy extraordinary to Prussia, in 1717 envoy extraordinary to the Hague, in 1719 plenipotentiary to Berlin, and in 1722 representative of Great Britain in the congress of Cambrai. He was created Baron Whitworth of Galway in 1721. Horace Walpole printed at the Strawberry Hill press a work of his entitled "Account of Russia as it was in the Year 1710."—Charles, Earl Whitworth and Baron Aldbaston, grand-nephew of the preceding, born at Leybourne, Kent, in 1754, died at Aldbaston, May 13, 1825. He was educated for a military life, and received a commission in the guards, but preferring a diplomatic career was appointed in 1786 minister plenipotentiary to the court of Poland, and in 1788 transferred to the same position at the Russian court, where he remained till 1800. He acquired a marked ascendency over the counsels of Catharine II., and after her death for a time exerted an influence over her son Paul, who however finally quarrelled with him and ordered him to quit his dominions. He was made an Irish peer, March 21, 1800, was sent as envoy to Copenhagen, and, on his return, as ambassador extraordinary and plenipotentiary to France in 1802. He returned in 1803, the rupture between England and France being complete. When the country was threatened with an invasion from France, he raised and equipped at his own expense a battalion of 600 men. In March, 1813, he was made lord of the bedchamber, in June raised to the British peerage as Viscount Whitworth of Aldbaston, and in August made viceroy of Ireland. In 1815 he was created Earl Whitworth and Baron Aldbaston. He resigned the viceroyalty of Ireland in 1817.

WHITWORTH, Joseph, an English engineer, born in Manchester about 1805. He was educated as an engineer, and for some years devoted much attention to the best methods of producing accurate plane surfaces in metals. In 1840 he read a paper on this subject before the British association, then in session at Glasgow, which had a powerful influence in causing the substitution of machines for planing or scraping metals to a plane surface for the old process of grinding them with emery; and not long afterward he invented several such machines. In 1841 he read a paper before the institution of civil engineers on "A Uniform System of Screw Threads." During the next 10 years he made several inventions and improvements in the manufacture of machinery; and at the London exhibition in 1851 his planing and tool machines attracted great attention. He was appointed a commissioner from the United Kingdom to the New York exhibition in 1853, and during his stay in the United States visited most of the principal manufactories of locomotives, car wheels, and machinery, of which he afterward published an interesting and instructive account. He had at this time commenced his investigations in relation to rifled firearms, and soon afterward began to manufacture rifles with a hexagonal bore and elongated grooved projectile, which almost immediately took rank as the most serviceable rifles of long range in the market. (See Rifle.) In 1856 or 1857 he commenced the application of his principle to rifled ordnance. The English government have adopted his cannon among other rifled arms in their army service. The Whitworth cannon, now manufactured by the Whitworth ordnance company of Manchester, has a hexagonal bore, is breech-loading, and has a twist sufficient to turn the projectile 3 times in the length of the gun; the projectile is a little more than 3 diameters in length, a double truncated cone in form, and grooved to fit the gun. Its range is very great, the 3-inch gun, with a charge of 2½ pounds, throwing its projectile 5 miles.

WHOOPING COUGH, an affection characterized by paroxysms of convulsive cough, accompanied by short and sudden acts of noisy expiration, followed by a long and whooping inspiration; it is the chincough of the English, the *pertussis* of Sydenham, and the *coqueluche* of the French. It regularly occurs but once in the life of an individual, and generally during infancy or childhood; but it has been known to attack a person twice, and adults and even aged people not unfrequently have it. It does not appear to have been distinguished from catarrhal affections until about the 18th century, and it is almost exclusively confined to temperate and cold regions. It begins with the symptoms of ordinary catarrh, which continue 5 or 10 days, after which the convulsive character of the cough becomes manifest, at intervals of from half an hour to 4 hours; the paroxysm is attended with the signs of threatened suffocation, lividity and swelling of the face and neck, fulness of the eyes, quick pulse, and extreme agitation; at the end of a few minutes, more or less, the coughing ceases on the vomiting of food or tough mucus; in severe cases there may be discharges of blood from the nose and mouth, and even fits of faintness. When the whoop is established, the catarrhal symptoms diminish or disappear, the fever is very slight, and the child may be lively, with good appetite, and apparently well in the intervals of the paroxysms; after 3 or 4 weeks, in the most favorable cases, the cough becomes looser and milder, with longer intervals, and finally ceases in 2 or 3 months, though recovery may be much delayed by unpleasant weather or exposure to cold.—Simple whooping cough runs its limited time, not amenable to medical treatment, and rarely, if ever, is fatal; but its complications of pulmonary and cerebral disease may destroy life, or leave behind various marks of irritation and inflammation in the lungs and brain, while the simple disease leaves no trace which throws light upon its nature; it is generally classed, however, among the neuroses. It may occur at all seasons of the year, sometimes epidemically, is unquestionably often communicated by infection, and its causes are entirely unknown. The whoop and the paroxysmal character of the cough prevent this disease from being confounded with any other. In simple cases the prognosis is favorable, but its complications in teething, unhealthy, or recently weaned children are dangerous and frequently fatal. In uncomplicated whooping cough the treatment consists, in the first stage, of that proper for ordinary catarrh, with gentle laxatives and emetics, low diet, simple expectorants, and confinement in a well ventilated, moderately warm room; careful watch must be kept for pulmonary inflammation, which must be met at once by appropriate remedies. When the second or paroxysmal stage has been fairly established, with diminution of fever, return of appetite, and an approach to health during the intervals, a change of air from the city to the country, and *vice versa*, with antispasmodics and expectorants, will complete the cure; quinine and other tonics are sometimes useful when the convalescence is slow. Complications, of course, require the treatment suited to their character; the most dangerous of these are bronchitis, pneumonia, and convulsions from hydrocephalus. Belladonna is regarded by many physicians as the best remedy for the spasmodic symptoms of this disease. Dr. Horace Green has treated it successfully by the local application of nitrate of silver to the mouth of the larynx.

WHORTLEBERRY (Anglo-Sax. *heort-berg*, hart berry), the name of certain low shrubs, bearing edible fruits, originally applied to *vaccinium myrtillus* (Linn.), a native of northern Europe. It is also found growing at the elevation of 4,000 feet above the level of the sea in the mountains of Scotland, and according to Loudon occurs on the N. W. coast of America. The berries are bluish black, of the size of a currant, covered with a mealy bloom, and esteemed for cooking or when eaten raw with cream. In the United States the name is applied to several species of *Gaylussacia*, a genus of low-branching, resinous-dotted shrubs of the general aspect of *vaccinium;* the flowers are white tinged with red or purple, the corolla tubular, ovoid, or bell-shaped, with a 5-cleft border, 10 stamens with awnless anthers; the fruit a berry-like drupe containing 10 seeds (nutlets). The most common species is the black whortleberry, or huckleberry as it is more generally called, a shrub 1 to 3 feet high, much branched, erect, the branches slender and pubescent when young; the leaves oval, oblong oval, or elliptical, entire, obtuse, thin, on short petioles, and borne on the lateral and terminal branches, profusely dotted beneath with resinous particles;. the flowers on short lateral racemes, with small colored bracts near the base of the stems, the calyx greenish yellow, the corolla of a dull red, stamens shorter than the corolla, the style projecting and terminated with a capitate stigma; the berries globular, of a shining black color, and sweet. Several varieties are known by some peculiar characters of the leaves or by the size and color of the fruit. The species is widely diffused from Canada to the mountains of Georgia. The berries find a ready sale, and thousands of bushels of them are annually gathered for the market from uncultivated lands. The blue tangle or dangle berry (*G. frondosa*, Torrey and Gray) grows taller and more spreading, in moist places, near lakes and cold springs; the shoots and fruit stalks are of a light pale green and reddish yellow color; the leaves pale green, oblong elliptical or obovate obtuse, and glaucous beneath; the flowers pendent on slender threads 1 to 3 inches long, the segments of the calyx appressed and acute; the corolla a broad bell with 5 short, angular, and reflexed segments, the style of the length of the corolla; the fruit large, bluish, slightly acid, ripening late. The bush or dwarf whortleberry (*G. dumosa*, Torrey and Gray) is distinguished by its shining leaves, conspicuously dotted on the upper surfaces with resinous grains; the corolla large and white or tinged with pink, rounded or funnel-shaped; the fruit large, black, crowned with the persistent calyx, the taste insipid. It occurs in sandy soils from Maine to Kentucky and southward. The bear whortleberry (*G. ursina*, Gray), occurring on the mountains of North Carolina, is a shrub 2 or 3 feet high; the leaves large, 2 or 3 inches long, thin, lanceolate, oblong, acute, entire, the veins like the branches rusty tomentose; the racemes remotely few-flowered with minute bracts, corolla bell-shaped, and berry black. The box-leaved whortleberry (*G. brachycera*, Gray) has thick evergreen, not resinous-dotted leaves, oval, finely crenate-toothed; racemes short and nearly sessile, pedicels very short, corolla cylindrical, bell-shaped. It is found in parts of Pennsylvania and on the mountains of Virginia. In shape and appearance the foliage is like that of box. Other species with showy flowers are indigenous to Brazil and Peru.—The whortleberries belong to the natural order of *ericaceæ*, but compose a distinct group known as the *vaccinieæ*, which from structural differences is separated into 3 principal divisions, viz.: the resinous-dotted *Gaylussaciæ* or true whortleberries, the bilberries, bleaberries, and blueberries, or *vaccinia* proper, and the cranberries or *oxycocci*, marsh plants with acid fruits. De Candolle erected the group into the natural order *vaccinaceæ*, and he has been followed by several eminent botanists, insisting on the importance of the inferior ovary and succulent fruit. The species are more abundant in North America than in Europe, a single European form, the bog whortleberry (*V. uliginosum*, Linn.), occurring in this country, on the summits of the mountains of New York and New England. Some finer fruits of the genus are well known as blueberries.—The twigs and bark of the whortleberries are astringent, and have been employed in tanning; the bark is also slightly tonic and stimulating. Spirits of a highly intoxicating quality have been made from the fruits, and wines have been colored by their juices. The species are also highly esteemed in Europe as garden shrubs, propagating from seeds and layers.

WHYDAH BIRD, or WIDOW BIRD. See WEAVER BIRD.

WIBERG, ANDREAS, D.D., a Swedish clergyman, born near Hudiksvall, Helsingland, in 1816. He was educated at Upsal, and in 1843 was ordained as a Lutheran clergyman, being at first sent from parish to parish as an itinerant assistant of the aged pastors. Disapproving of the indiscriminate and compulsory administration of the eucharist required by the laws of the kingdom, he obtained permission to suspend his labors as a preacher for a season, translated and published some of Luther's works, and edited a religious journal called "The Evangelist." After some years spent in literary pursuits, he was invited by a body of seceders to become their pastor. He was not yet prepared to leave the established church, but published an "Apology" for their secession, in which he defended the principles of religious liberty. In 1851 he visited Hamburg, after several interviews with the Rev. Dr. Oncken avowed himself a Baptist, and was baptized in July, 1852, at Copenhagen, while on his way to the United States. He remained in this country 3 years, laboring for a time among the Swedes in the West, and preparing several religious works for circulation in Sweden on his return. The American Baptist publication society assumed the publication of these works, and appointed him its superintendent of colportage in Sweden. In 1855 he returned home, and has since been actively engaged at Stockholm as pastor of the Baptist church in that city, superintendent of colportage, and editor of "The Evangelist."

WICHERN, JOHANN HEINRICH, D.D., a German philanthropist, born in Hamburg, April 21, 1808. He studied theology at Göttingen and Berlin, and was offered a parish, but refused it, as he had determined to devote himself to the reformation of young delinquents and vagrants. In 1833, having raised $18,000 by contributions, he purchased and opened the *Rauhes Haus* (rough house), a large thatched cottage, with rough walls, at Horn, about 4 miles from Hamburg, with 2 or 3 acres of ground around it. (See SCHOOLS, REFORMATORY.) In 1834 a second house was opened, and the institution now occupies a tract of 32 acres, a part of which is cultivated, and 14 houses for the accommodation of as many families of vagrant children, together with a chapel, school rooms, a printing office, bindery, stereotype foundery, bakery, workshops for different trades, a book store, buildings for the teachers, &c. The necessity for a supply of teachers led Dr. Wichern to establish the "Institute of Brothers," intended for the gratuitous training of those who are to become the teachers, "elder brothers," and "house fathers" of the children, or to fill situations elsewhere requiring the same patience, knowledge, and tact. They are at first attached to the families as assistants, and after an apprenticeship they undertake in rotation the direction; each brother, before the course of 4 years expires, has been twice in charge of each of the families. The establishment of reformatories in other portions of Germany and Europe, on a similar plan to the *Rauhes Haus*, caused a demand for these trained teachers; and they were also wanted for superintendents of hospitals, prisons, and charitable institutions, agents for Christian associations, missionaries, &c. While occupying these various posts, they keep up their correspondence with the founder of the institute and its officers, and for convenience adopted a cipher which is common to them all. Annually, too, those who are able assemble, and those who are not send reports to the institute of their labors for the year. Through this organization all or nearly all the efforts for the reformation and moral improvement of the poor and vicious throughout Germany were united by Dr. Wichern, and he gave to it the name of the "Inner Mission" (*Innere Mission*). In Sept. 1848, an ecclesiastical convention was held at Wittenberg, and at his suggestion a central committee for the inner mission, of which he was a member, was appointed. The next year it received the name of the "Inner Mission of the German Evangelical church." Its members are now to be found in Asia, Africa, and America, as well as all over the continent of Europe. Beside the young vagrants and delinquents, and the institute of brothers of the inner mission, Dr. Wichern has established a school on the same premises, though a little secluded from the others, for disobedient and wayward children of wealthy parents, under the care of some of the brothers. The success of the *Rauhes Haus* as a reformatory has been greater than that of any other institution of the kind in the world. The relapses into vice of the pupils, after leaving the institution, do not exceed 4 or 5 per cent. In 1851 Dr. Wichern visited England, and on his return was employed by the Prussian government to visit and inspect the prisons and houses of correction of the kingdom, and suggest measures for their improvement. This led to his appointment the next year as director of prisons for the kingdom, and the wardens and overseers of the prisons and bridewells are now all graduates of the institute of brothers, who have been specially trained for this work. Since 1844 Dr. Wichern has published a monthly periodical, *Fliegende Blätter des Rauhen Hauses*, devoted to the interests of the reformatory and of the inner mission. From this it appears that the annual receipts and expenses of the school are about $6,000. The institute is supported by the German Evangelical church, and has a separate treasury. The expense of the support of the children per head is about $51 a year. Dr. Wichern has published an account of the system, entitled *Die Innere Mission der deutsch-evangelischen Kirche* (Hamburg, 1849).

WICHITA, an unorganized N. W. co. of Texas, bounded N. by Red river and drained by the Wichita and other streams; area, about 900 sq. m. It has a diversified surface, is partly covered by dense forests, and is thinly settled.

WICKLOW, a S. E county of Ireland, in the province of Leinster, bounded E. by St. George's channel; area, 781 sq. m.; pop. in 1861, 86,093. The principal towns are Wicklow, the capital, Arklow, Baltinglass, and Rathdrum. The coast is generally rocky and precipitous. The chief rivers are the Slaney, Vartrey, and Ovoca. The surface of the county is mountainous, Lugnaquilla, the highest peak, attaining the height of 3,039 feet above the level of the sea. The scenery is remarkably picturesque. Gold and silver are found in small quantities, and iron, lead, zinc, copper, tin, manganese, arsenic, antimony, and pyrites in more or less abundance. The soil varies much in different parts of the county, but upon the whole is tolerably fertile. The climate is mild and agreeable. The county returns two members to parliament. —WICKLOW, the capital, is situated on the right bank of the estuary of the river Vartrey, in lat. 52° 58′ N., long. 6° 3′ W., 25 m. S. S. E. from Dublin; pop. in 1851, 3,141. The harbor is accessible by vessels drawing 8 or 9 feet of water, and the town has a small trade, exporting grain, and copper and lead ores.

WICQUEFORT, ABRAHAM DE, a Dutch diplomatist, born in Amsterdam in 1598, died in 1682. He was representative of the elector of Brandenburg at the court of France from 1626 until 1658, when he was imprisoned by Cardinal Mazarin on a charge of having made improper disclosures to the states-general. He remained in the Bastile a year, and was then ordered to leave France. He first went to England, and then to Holland, where De Witt made him historiographer of the states, and the duke of Brunswick-Lüneburg made him his minister to the Hague. In 1676 he was condemned to perpetual imprisonment on a charge of giving information to the enemies of the states; but after 4 years' confinement he made his escape, and fled to the court of the duke of Zell. There he labored ineffectually to procure the reversion of his sentence, and is said to have died of chagrin. He was the author of a work entitled "The Ambassador and his Functions," and of a "History of the United Provinces," both in French.

WIDGEON, the common name of the river ducks of the genus *mareca* (Steph.). They have a bill shorter than the head, of equal width throughout, much rounded at the tip, with a strong broad nail, and upper lamellæ prominent; wings long and pointed, 1st and 2d quills longest; tail moderate and wedge-shaped; toes fully webbed, and hind one lobed. There are about 10 species in various parts of the world, performing periodical migrations at night in vast flocks; they are found on the sea shore and on the margin of lakes and rivers, feeding chiefly on vegetable substances. The American widgeon or bald pate (*M. Americana*, Steph.) is about 22 inches long and 35 in alar extent; the tail has 14 feathers, and the bill is blue, black at the base and tip; upper parts finely waved transversely with black and gray or reddish brown, and lower parts mostly white; top of head nearly white, with a broad green patch around and behind the eyes; rest of head and neck grayish, spotted and banded with black; wing coverts white, the greater tipped with black; speculum green, encircled by black; tertials black on the outer web, edged with white. It is an active bird, with a swift and well sustained flight, the ranks being of various and irregular forms, and found in company with teals and other ducks; it is distributed throughout North America, and is accidental in Europe. The flesh is highly esteemed, especially when they have fed in the rice fields of the south; they breed in the north, and also in Texas, according to Audubon, and the eggs are 6 to 8. They do not dive, but feed with the head and neck immersed, swimming very near together; the food consists of aquatic seeds, roots, insects, worms, small fry, leeches, nuts, and grain, especially rice in the rainy season; being very fond of the tender aquatic plants on which the canvas-back duck feeds, and no diver itself, it watches the latter and snatches the morsels as it emerges and before it has had time to open its eyes; it walks gracefully on the land. The European widgeon (*M. Penelope*, Bonap.) is rather smaller, and not uncommon all along the Atlantic coast of the United States; it differs chiefly in having the head and neck reddish brown or cinnamon, the former with a few dusky spots, the top of the head cream-colored, and only a few traces of green around the eyes.

WIDIN, Widdin, or Vidin, a fortified town of Turkey, capital of an eyalet of the same name, on the right bank of the Danube, in the province of Bulgaria, 130 m. S. E. from Belgrade; pop. 25,000. It is situated on a wide plain formed by a bend of the Danube opposite the city of Kalafat in Wallachia. It is considered the key of Bulgaria, commanding Little Wallachia and the approaches to the defiles of Transylvania, and covering the road leading through Nissa and Sophia to Adrianople. In 1689 the Turks were signally defeated by the imperialists before the walls of Widin, but the fortress itself, though frequently assailed, has never been captured, and is hence called by the Turks the "Virgin Fort." The town has no manufactures, but considerable commerce in corn, wine, and salt. It is the residence of a Greek archbishop as well as of the pasha. The inhabitants are Turks, Greeks, and Armenians.

WIED, Prince of. See Neuwied.

WIELAND, Christoph Martin, a German author, born in Oberholzheim, a village near Biberach, in Swabia, Sept. 5, 1733, died in Weimar, Jan. 20, 1813. His father was pastor of the church of his native place, and shortly after the birth of his son became senior minister of Biberach. The son early learned the Latin, Greek, and Hebrew languages, and by the time he had reached the age of 12 had written poetry, first in Latin, and then in German. At the age of 14 he was sent to the school at Klosterbergen near Magdeburg, where he read the ancient authors, especially Xenophon, and occupied himself with English and French literature. By reading the works of Voltaire, D'Argens, and Lamettrie, his religious opinions were thoroughly shaken. The disquiet produced by this change of mind was so serious as to affect his health, and when 16 years old he went to Erfurt, where one of his relatives, a physician, fitted him for the university. After a residence of 18 months in that city, according to his own account, more agreeable than useful, he returned in 1750 to his father's house. While there he fell in love with his cousin Sophie von Guttermann, afterward celebrated under the name of Sophie von Laroche. Once while walking with her the idea of a poem occurred to him, which was published under the title of *Ueber die Natur der Dinge*, *oder die vollkommenste Welt* ("Upon the Nature of Things, or the Most Perfect World"). Although he afterward regarded this with very little complacency, it gave him at the time considerable reputation among men of letters. In the autumn of 1750 he went to the university of Tübingen, with the intention avowedly of studying law, but gave his time almost exclusively to belles-lettres; and, influenced by the sensation aroused in Germany by De Bar's *Épîtres diverses*, he published in 1751 *Zehn moralische Briefe* ("Ten Moral Letters"), addressed to his cousin Sophie. It was at this time that the influence of Klopstock incited him on the one hand to a religious enthusiasm, which found expression in the *Empfindungen des Christen*, and on the other to an artificial German feeling which led him to attempt the composition of an epic poem entitled *Arminius*. This, being sent to Bodmer, gave rise to a close intimacy between the poet and the critic. In 1752 he returned to Biberach. At the instance of Bodmer he gave up the plan he had formed of going to Göttingen to fit himself for teaching, and went to Zürich, where he was introduced by his friend to some of the most distinguished literary men of that city. There he remained until 1754, during which time he produced several works, all marked by the influence of Bodmer, for whose poetry, far inferior to his own, he had a warm admiration. One of his publications was a treatise on the beauties of Bodmer's poem of *Noah*. Here also he wrote an epic in 3 cantos entitled *Der geprüfte Abraham*, *Briefe von Verstorbenen an hinterlassene Freunde* (1753), and many shorter compositions. After leaving Bodmer's house he became a tutor in a private family in Zürich, and subsequently took up his residence in Bern. In 1756 the 7 years' war broke out, and the lively interest which Wieland took in the deeds of Frederic the Great induced him to attempt the realization in a poem of his ideal of a hero, choosing for the purpose the story of Cyrus. The first 5 cantos appeared in 1757, but they deservedly met with little success, and the project was abandoned. He now attempted dramatic composition, and wrote the tragedies *Lady Johanna Gray* and *Clementine von Porretta;* but the failure of his efforts led him to the more familiar and more congenial field of Greek story, and about this time he published *Araspes und Panthea*, from the beautiful episode in the "Cyropædia" of Xenophon. His residence in Bern was exceedingly favorable to his intellectual culture, as he constantly associated with women of superior talents and education, and among others became intimately acquainted with Julia Bondeli, the friend of Rousseau. In 1760 he returned to Biberach as director of the chancery. His residence there was not at all to his taste; the business of his office was not in accordance with his feelings; he missed the cultivated society to which he had been accustomed; and above all, he found his cousin Sophie married. His dissatisfaction was somewhat dissipated by the task of translating the plays of Shakespeare, 28 of which were printed in 8 volumes between 1762 and 1768. The previous studies of Wieland in classic and French literature, and the naturally light and *spirituel* tendency of his own mind, hardly fitted him for the work of giving a faithful transcript of the great English dramatist. Imperfect as the translation is, especially in comparison with that of Schlegel, it yet opened the path for his successors. In the meanwhile he fell into a society which exerted a decided influence upon the character of his after writings. Sophie von Laroche and her husband, and the count Stadion, who had retired from his position as minister to the elector of Mentz, took up their residence near Biberach. Stadion's library was rich in French and English writers, especially those of the moral deistical school, and his study of these led the poet to manifest tendencies radically opposed to that religious mysticism for which his writings had previously been distinguished. He became the poet of good society, and his writings soon acquired a voluptuous character and finally an obscenity which exposed him to severe criticism. In vain Wieland, in defending himself from his critics, pointed to the scrupulous morality of his private life, and wished that his enemies "could see him in his quiet domestic home; they would then judge otherwise of him." His reputation became bad, but he outlived the storm. The first production that gave an idea of the change his mind was undergoing was the tale of *Nadine*, which he himself called a creation after the manner of Prior. This was followed by the *Abenteuer des Don Sylvio von Rosalva, oder der Sieg der Natur über die Schwärmerei* ("Adventures of Don Sylvio de Rosalva, or the Victory of Nature over Fanaticism," 1764), for which "Don Quixote" served as his model, and by the *Komische Erzählungen* ("Comic Tales," 1763–'4). In 1766 and 1767 appeared his novel of *Agathon*, which placed his reputation on a lasting basis. The scene of this story is laid in ancient Greece, and the object of it is to show how far a man can proceed in virtue and wisdom through the agency of his natural faculties, and to what an extent the world without him influences his development. His poems at this period were almost all of an amatory character. His views of love he intended to express in a large poem called *Psyche*, but of this only fragments appeared. In 1768 he published *Idris und Zenide*, in 5 cantos, and *Musarion*, which he himself called a philosophy of the graces, and which is remarkable for its elegance, ease, and harmony of style. A poem entitled *Die Grazien* appeared in 1770, and in 1771 *Der neue Amadis*, in which he celebrates the superiority of mental over physical beauty. This subject he took up again later in life in his *Krates und Hipparchia*. In 1765 Wieland had married the daughter of an Augsburg merchant, with whom he lived long and happily, and who bore him 14 children in 20 years. In 1769 he went to the university of Erfurt as professor of philosophy. With *Der verklagte Amor* ("Cupid Accused") he gave up the exclusive attention he had paid to amatory poetry, although defending it in this poem. The *Dialoge des Diogenes von Sinope* (1771) was intended as a vindication of his own philosophical views. Rousseau's works, then causing a great sensation in Europe, were a fair mark for satire, and against them he wrote a little novel entitled *Koxhox und Kikequetzel* (1769–'70) and *Beiträge zur geheimen Geschichte des menschlichen Verstandes und Herzens, aus den Archiven der Natur* ("Contributions to the Secret History of the Human Understanding and Heart, from the Archives of Nature," 1770). The reforms of Joseph II. of Austria also stirred his sympathies and prompted him to write *Der goldene Spiegel* ("Golden Mirror," 1772), which was a collection of the most useful lessons that the great could learn from the history of mankind. In 1772 the duchess Amalia of Saxe-Weimar chose Wieland, on the recommendation of Dalberg, as the instructor of her two sons. He therefore went to Weimar, received the title of *Hofrath*, with a salary of 1,000 thalers, which was continued after his duties were finished in the form of a pension, and became a great favorite with the duchess, who had already assembled about her many distinguished literary men. Having ample leisure for authorship, he produced a melodrama called *Die Wahl des Hercules* ("The Choice of Hercules"), and the lyric drama *Alceste*, both of which were highly successful. He became editor of the *Deutscher Mercur*, a monthly periodical devoted to literary criticism, with which he remained connected until the end of his life. At this time there was a general outcry in Germany against him as an immoral and even as an atheistical writer. Many theologians would not allow their followers to read his works. Lavater called upon all good Christians to pray for the sinner. In 1773, on Klopstock's birthday, his works were solemnly burned by the disciples of that poet. He was assailed by Goethe in a satire called *Götter, Helden und Wieland* ("Gods, Heroes, and Wieland"), not for any immorality in his writings, but for treating the mythologic heroes unheroically, and degrading our conceptions of the old pagan life. Wieland reviewed the work with characteristic good nature in the *Deutscher Mercur*, and recommended it to all who were fond of wit and sarcasm. Goethe not long afterward went to Weimar, and became a warm friend of his antagonist. The literary activity of Wieland continued unabated for more than 20 years longer. One of his earliest works while in Weimar was the *Geschichte der Abderiten* (1773), which, through a humorous account of the ancient inhabitants of Abdera, exposed the errors, absurdities, and contradictions of men. This was succeeded by *Erzählungen und Märchen* (1775–'83), tales which were partly original and partly borrowed from foreign sources. In 1780 appeared the greatest of his poetical works, the epic romance of *Oberon*. He now formed the design of nationalizing the masterpieces of antiquity by a series of translations, and with this end in view published in 1782 a version of the epistles of Horace, and in 1786 a version of the satires. They were accompanied by commentaries, and Wieland himself declared that the translation of the epistles was his best work. These were followed by a version of Lucian with a commentary (6 vols. 8vo., Leipsic, 1788–'91). The long and constant study of that author led to a series of works in which his manner was successfully imitated, the *Dialogen in Elysium* (1791), *Göttergespräche*, *Gespräche unter vier Augen*, and *Peregrinus Proteus* (1791). From 1794 to 1802 a collected edition of his works was published in 36 volumes with 6 supplementary ones, and the profits arising from this enabled him to buy the estate of Osmannstädt near Weimar. Here he lived from 1798 to 1803 in the greatest happiness, and fully occupied with literary labors; not the least important of these were his contributions to the *Attisches Museum*, of which he was editor. From 1805 to 1809 he edited the *Neues attisches Museum*, in conjunction with Hottinger and Jacobs. While at Osmannstädt he renewed his studies of antiquity, and with the design of making known to Germany the masterpieces of Greek poetry, philosophy, and oratory, he published *Aristippus und einige seiner Zeitgenossen* ("Aristippus and some of his Contemporaries," 1802–'4). The death of Sophie Brentano, a granddaughter of Sophie von Laroche, and an inmate of his own family, followed by that of his wife, rendered his residence at Osmannstädt unpleasant; and he returned to Weimar, where he formed an intimate friendship with Schiller. Here he began his last literary work, the translation of the letters of Cicero, which he did not live to finish. His remains were carried at his own request to Osmannstädt, and buried in the same grave with those of Sophia Brentano and his wife. During his last years Alexander of Russia made him a member of the order of St. Anne, and Napoleon of the legion of honor. His life was written by Heinrich Döring (8vo., Sangerhaus, 1840).

WIELICZKA. See SALT, vol. xiv. p. 300.

WIESBADEN (anc. *Aquæ Mattiacæ*), a city and the capital of the duchy of Nassau, and of the circle of its own name, situated on the N. slope of the Taunus mountains, in the basin of the Salzbach, 20 m. W. S. W. from Frankfort, with which it is connected by railway, and 5 m. from Mentz; pop. in 1859, 16,000. Its principal buildings are the *Kursaal*, a large and beautiful saloon, forming the E. side of a square, while the N. and S. sides are lined by colonnades with great numbers of gay shops; the ducal palace; the new palace containing a library of 60,000 volumes; the palace of the ministry; the villa of the dowager duchess; the ducal theatre, one of the finest in Europe, and richly endowed; and the Catholic and Evangelical churches. The city has a museum, 2 gymnasia or collegiate schools, a secondary school, a *Kindergarten*, and a public library. The great attraction at Wiesbaden, however, is its numerous sulphur baths, of varying temperatures from 118° to 156° F. The principal and hottest spring, the Kochbrunnen, appears as if in violent ebullition from the quantity of carbonic acid gas which escapes from it. There are in all 14 springs, most of them with several bathing houses attached, beside an orthopedic institute which makes use of the waters to aid in removing deformity of the limbs. Until 1862 gambling was practised here to an extent hardly surpassed in any other city in the world, but the duke has now forbidden it under severe penalties. The number of visitors is about 15,000 annually. The city is of very ancient date, the virtues of its baths having been well known in the time of Pliny. Numerous ruins, coins, &c., found in the vicinity, still testify to the Roman occupation of the region.

WIFE. See BRIDE AND BRIDEGROOM, HUSBAND AND WIFE, and MARRIAGE.

WIFFEN, JEREMIAH HOLME, an English author, born near Woburn, Bedfordshire, in 1792, died May 2, 1856. He belonged to the society of Friends, was a schoolmaster for several years, and in 1819 was appointed librarian to the duke of Bedford, whose notice he had attracted by some stanzas on portraits of the Russell family. He retained this office to the close of his life. He is best known by a translation into English Spenserian stanzas of Tasso's "Jerusalem Delivered" (1830), but he also made a translation of the poems of Garcilasso de la Vega, and published "Aonian Hours, and other Poems" (1819); "Julia Alpinula, the Captive of Stamboul, and other Poems" (1820); and "Historical Memoirs of the House of Russell" (3 vols., 1833).

WIG, a contraction of PERIWIG (Fr. *perruque*), a covering for the head formed of hair, silk, thread, or other material, designed to imitate the natural hair. The oldest wigs in existence are among the Egyptian antiquities of the British and Berlin museums, composed of hair, and figured in Wilkinson's "Ancient Egyptians" (vol. ii. p. 326), where curious details respecting their extensive use are given. Astyages, king of the Medes, according to Xenophon, wore a wig. Allusions to wigs are found in the writings of Livy, Ovid, Martial, Juvenal, Propertius, Plutarch, and Suetonius; and even the use of natural hair in their manufacture was understood by the ancient Romans, the blond locks of the German maidens being preferred. It was one of these blond wigs in which the empress Messalina, according to Juvenal, was wont to disguise herself in her frequent assignations. In the early ages of the Christian era, the fathers of the church, Tertullian, Clement of Alexandria, St. Ambrose, and others, protested against the use of wigs, and condemned it in very strong terms, but in vain; and after it had become evident that resistance to the practice of wearing them was useless, even churchmen themselves, following the example of Zonaras, a Greek monk, Balsamon, and others in the 12th century, commenced covering their heads with perukes. In 1518 Duke John of Saxony ordered his bailiff, Arnold of Falkenstein, to purchase for him secretly at Nuremberg a large and well made wig. Henry III. of France, having lost his hair from sickness, wore a wig, and his courtiers began to follow his example. Under Louis XIII. the use of wigs became general. They were made of silk or thread, but did not attain the dimensions which afterward became common. In the latter part of the reign of Louis XIV., to wear one's own hair, or to wear only a small wig, was almost an offence against good morals. The dimensions of the wig had been increasing from the beginning of his reign, and at length they extended half way down the back, while the curls on the sides fell equally low upon the breast. They were generally made of silk, though a few of the most costly were of hair. From France the fashion pervaded Europe, and was at its height in England during the reign of Queen Anne, as is familiar to us in the portraits of Addison, Steele, Congreve, &c. Toward the close of his life Louis XIV. began to adopt the practice of powdering the wig slightly; but his grandson Louis XV. from childhood used powder upon his wig, and made it completely white, and his courtiers followed the fashion. This practice continued till the French revolution, when wigs and powder disappeared together from France. The large, white, "full-bottomed" wig is still retained in the English courts, and worn by the judges as a symbol of the age and dignity which should characterize the judiciary. The large wig was somewhat in vogue in the American colonies in the last half of the 18th century, but disappeared very generally after the revolution. Wigs are now seldom worn except to conceal baldness. Great improvements have been made in them within a few years. Hair is used wholly in the more costly, and in all for the portion which is exposed, and the wig is much lighter and permits more thorough ventilation than was formerly the case. Great improvement has also been made in the close imitation of nature, which is sometimes so perfect as to defy detection.

WIGHT, Isle of, an island in the English channel, 2 m. off the coast of Hampshire, to which county it is politically attached, separated from the mainland by the roadstead of Spithead and the Solent; extreme length 23 m., breadth 15 m.; area, 164 sq. m.; pop. in 1851, 50,324. Newport is the capital, and the other places of importance are Cowes, Ryde, Yarmouth, Brading, Newton, Ventnor, and St. Helen's. The coast of the island is indented by several small estuaries and bays, and at the S. part and "back of the island" it is bold and cliffy. The principal rivers are the Brading, Medina, and Yar. The general surface is elevated, and consists of plains or downs, diversified with hills and dales and tracts of woodland. The scenery is picturesque and romantic. St. Catharine's hill, the highest point, is 830 feet above the sea, and Dunnose, the next highest, is 792 feet. The elevated part of the island consists of chalky formations, particularly rich in fossil remains, under which there are various kinds of schists. Good coal, yellow and red ochre, fullers' earth, sandstone, pipe clay, native alum, sulphur, and copperas stones are found. Sand and flints for the manufacture of glass and china are extensively exported to London and elsewhere. The climate is remarkably healthy, and so mild that myrtles, geraniums, and many other delicate plants grow luxuriantly in the open air. The soil is generally a rich loam, and a very small portion of the surface is waste. Wheat, oats, barley, turnips, and potatoes are the principal crops, and the island is said to produce 7 times as much as is consumed by the population. Large flocks of sheep of superior quality are fed upon the uplands. Some manufactures are carried on at Newport; and the principal exports are grain, wool, salt, and silicious sand. —The name given to the Isle of Wight by the ancient Britons was Guith or Guict, which means the "divorced" or "separated," and the Romans called it Vecta or Vectis. In A. D. 43 the island was conquered by a Roman general; and in 530 Cerdic, a Saxon chieftain, who founded the kingdom of Wessex, colonized it with Jutes and Saxons. The Danes seized it in 787. William Fitzosborne, afterward earl of Hereford, who came to England with William the Conqueror, received the Isle of Wight as an independent lordship. It was conferred upon the earl of Devon by Henry I.; and Edward I. purchased the reversion of it for 6,000 marks. The duke of Warwick was crowned king of it by Henry VI. (1445). The Isle of Wight contains very extensive barracks, erected from 1800 to 1815, and the depot companies of several regiments are stationed here, while the head-quarters are in British colonies. Osborne house, the marine villa of Queen Victoria, is near East Cowes on the N. shore of the island. Carisbrooke castle, where Charles I. was confined, is near Newport. (See Carisbrooke.)

WIGHT, Orlando Williams, an American author, born at Centreville, Alleghany co., N. Y., Feb. 19, 1824. He was educated at Westfield academy, N. Y., and Rochester collegiate institute, and subsequently spent several years in European travel. He has been a large contributor to the leading American reviews, and has published "The Philosophy of Sir William Hamilton" (8vo., New York, 1853), "Life of Abelard and Héloïse" (12mo., New York, 1853), and translations of Cousin's "History of Modern Philosophy" (2 vols. 8vo., New York and Edinburgh, 1852), Cousin's "The True, the Beautiful, and the Good" (8vo., New York and Edinburgh, 1854), and "Pascal's Thoughts" (New York, 1859). He has also edited and revised 12 volumes of "French Classics" (New York, 1858-'60). He resides at Rye, N. Y.

WIGTONSHIRE, a county of Scotland, bordering on the Irish sea and the frith of Clyde; area, 459 sq. m.; pop. in 1861, 42,038. The chief towns are Wigton, Stranraer, and Whithorn. The coast is generally bold and rocky, and indented by several bays, the most important of which are those of Wigton, Luce, and Loch Ryan. The principal rivers are the Cree and Badenoch, which are navigable for short distances. The surface is generally hilly, but the elevation above the sea nowhere exceeds 1,500 feet, and in general varies between 400 and 900 feet. About ⅓ of the land is arable, but it is generally better suited for grazing than tillage. The principal crops are oats, barley, wheat, and potatoes. Great attention is paid to rearing cattle, and the breed is excellent. The county returns one member to parliament, and the towns of Wigton, Whithorn, and Stranraer unite with New Galloway in Kirkcudbrightshire in sending another.

WILBERFORCE. I. William, an English philanthropist and statesman, born in Hull, Aug. 24, 1759, died in London, July 29, 1833. He was educated at St. John's college, Cambridge, and elected to parliament from his native city when barely 21 years of age. There he became the intimate friend and associate of William Pitt, of whose administration he was one of the chief pillars. In 1784 he was elected to parliament from Yorkshire, though that county had long been the stronghold of the whig nobility. He was 6 times reëlected, 5 times without a contest, and the 6th by a large majority. In 1812 he resigned his seat in consequence of infirm health, which unfitted him for the arduous duties of a member for that important county, but was elected from the borough of Bramber, and continued in parliament till 1825. While a school boy at Wimbledon, his aunt, who was an ardent admirer of Mr. Whitefield, had brought him under the influence of the Methodists, but his subsequent gay life at Cambridge had dissipated any serious impressions he then experienced. In 1784-'5, however, he made a tour on the continent with Isaac Milner, a man of deeply religious character, and from that time his whole career and principles of action were changed. He sustained Pitt's parliamentary reform measures, and in the session of 1786 proposed a plan for purifying county elections by establishing a registry of freeholders and holding the poll in several places at the same time. The country was not then ripe for the measure, but he lived to see it incorporated in the reform bill of 1832. Early in 1787 he aided in establishing a society for the reformation of manners, and obtaining a royal proclamation against vice and immorality. He had formed in the previous year the acquaintance of Thomas Clarkson, who laid before him his work on the slave trade, and entreated his efforts in parliament in favor of its abolition. The subject strongly enlisted his sympathies, and soon after the meeting of parliament in 1787 he gave notice of his intention to call the attention of the house to the subject. He was prevented by ill health from appearing in public for some time after this; and in May, 1788, Mr. Pitt in his name proposed a resolution, based on a number of petitions previously presented, pledging the house to take the state of the slave trade into consideration early in the ensuing session. It was not until 1791, however, that Wilberforce moved for leave to bring in a bill to prevent further importation of African negroes into the British colonies. The measure was ably supported by leading members of both parties, but was lost by a majority of 75, mainly, it is said, from the apprehension that it was in some way connected with Jacobinism. In April, 1792, he again called the attention of parliament to the measure, and continued to press it till 1807, when during the brief administration of Mr. Fox he secured its adoption in both houses. He next commenced the agitation of the question of negro emancipation, which he continued to advocate during the remainder of his parliamentary career, and on his retirement intrusted it to Mr. (afterward Sir) Thomas Fowell Buxton. Just before his death the emancipation act was passed. In addition to his efforts in parliament, he had labored to secure from foreign powers the prohibition of the traffic in slaves, and with great success. In 1797 he published "A Practical View of the Prevailing Religious System of Professed Christians in the Higher and Middle Classes of this Country, contrasted with real Christianity," which had an immense sale, and was translated into the French, Italian, Spanish, Dutch, and German languages. He exerted himself for the promotion of missions, the establishment of a national church, and the appointment of bishops in India, and throughout his life from one third to one fourth of his income was devoted to the purposes of charity. He was buried in Westminster abbey, and a statue was erected there to his memory. Beside his "Practical View," Mr. Wilberforce published during his life many essays and pamphlets and a volume of "Family Prayers." A selection from his letters was made after his death by his sons, and published in 2 vols.

8vo. His memoirs were also compiled by them. II. Robert Isaac, an English clergyman and author, second son of the preceding, born at Broomfield house, near Clapham common, Dec. 19, 1802, died in Albano, Italy, Feb. 4, 1857. He was educated at Oriel college, Oxford, taking the highest university honors in 1823, and was subsequently chosen fellow of his college, associating in that capacity with Drs. Pusey and Newman, Mr. Froude, and other leaders of the high church party. He became tutor and public examiner *in litteris humanioribus*. In 1830 he left Oxford to take charge of a parish. In 1840 he obtained the living of Burton Agnes, and was made archdeacon of the East Riding of Yorkshire. He published shortly afterward a compendium of ancient history under the title of "The Five Empires," and a treatise on "Church Courts and Discipline," followed by two tales, "Rutilius and Lucius, or Stories of the Third Age." His next publications, including the "Doctrine of the Incarnation" and "Doctrine of Holy Baptism," attracted great attention by the very positive doctrines they enunciated. With Archdeacon Manning and others he signed the circular letter protesting against the Gorham decision. He also published a "History of Erastianism" (8vo., London, 1851); "Doctrine of the Eucharist" (1852); "Inquiry into the Principles of Church Authority" (1854); and sermons "On the Holy Communion" and "On the New Birth of Man's Nature." Finding that he could no longer hold his position in the church of England consistently with his religious convictions, he resigned his preferments, and after passing some time in retirement was received into the Roman Catholic church in Paris in Oct. 1854. He entered the *Academia Ecclesiastica* at Rome with the design of becoming a priest, but did not live to finish his studies. III. Samuel, bishop of Oxford, brother of the preceding, born at Broomfield house, Sept. 7, 1805. He was educated at Oriel college, Oxford, was ordained in 1828, and appointed rector of Brightstone in the Isle of Wight in 1830. In 1837 he was appointed select preacher before the university of Oxford; in 1839 archdeacon of Surrey, rector of Alverstoke, and chaplain to Prince Albert; in 1840 canon of Winchester cathedral; in 1841 Bampton lecturer; in 1844 sub-almoner to the queen; and in 1845 dean of Westminster. In the last named year he was again select preacher before the university, and in November was appointed bishop of Oxford, to which office is attached the chancellorship of the order of the garter. In 1847 he was made lord high almoner of the queen. He is one of the ablest debaters in the house of lords. Beside the life and the correspondence of his father prepared by him and his brother, Bishop Wilberforce has published "Eucharistica" (1839); "Sermons at Oxford" (1839); "Rocky Island and other Parables" (1840); "Agathos and other Stories" (1840); "History of the American Episcopal Church" (12mo., 1844); "Note Book of a Country Clergyman;" "Sermons before Queen Victoria" (1844); "Sermons preached on several Occasions" (1854); and "Sermons on Miscellaneous Subjects" (1855).

WILBRANGER, an unorganized N. W. co. of Texas, bounded N. by Red river and drained by Pease river and other streams. It is mountainous in the N. W. part, and the soil is moderately productive.

WILBRORD, or Willibrod, Saint, generally called the apostle of the Frisians, born in the Saxon kingdom of Northumbria about 657, died in 738. He was brought up in St. Wilfred's monastery at Ripon, spent 13 years in Ireland, and at the age of 33 with 11 or 12 associates embarked as a missionary for Friesland, where he was warmly welcomed by the Franconian prince Pepin, who had just conquered a part of the country from the pagan prince Radbod. Wilbrord made two visits to Rome (692 and 695), and on the latter occasion was made bishop by Pope Sergius over all the converted Frisians. A missionary journey to Denmark remained without permanent effect. At the island of Fositesland, which is supposed to be the modern Helgoland, and at that time belonged to the dominions of the Frisian king Radbod, he barely escaped death. Returning to that part of Friesland which was under the rule of the Franks, he founded a large number of Christian churches, many of which were destroyed a few years later in consequence of the successes of the pagan Frisians. He was buried in the monastery of Echternach near Treves, in which he lived several years, and is commemorated in the Roman Catholic church on Nov. 7.

WILBUR, Hervey Backus, M.D., an American philanthropist, born at Wendell, Mass., Aug. 18, 1820. He was graduated at Amherst college in 1838, taught school for some months, then studied engineering, and finally determined to become a physician. He practised first at Lowell and afterward at Barre, Mass. Meeting an account of Dr. Seguin's school for idiots in Paris, he resolved to open a school of a similar character, and in July, 1848, received the first idiot pupils into his own house in Barre. In 1851, the legislature of New York having decided to establish an experimental school for idiots at Albany, Dr. Wilbur was appointed superintendent. In 1854 the institution was organized as the state asylum for idiots, and buildings were erected for it at Syracuse. He is still in charge of it, and under his care it has proved more successful than any other institution of the kind.

WILCOX. I. A new central co. of Georgia, bounded N. E. by the Ocmulgee river; area, about 500 sq. m.; pop. in 1860, 2,115, of whom 421 were slaves. The surface is undulating and the soil fertile. Capital, Abbeville. II. A S. W. co. of Alabama, intersected by the Alabama river; area, 1,200 sq. m.; pop. in 1860, 24,618, of whom 17,797 were slaves. The surface is undulating and the soil generally fertile.

The productions in 1850 were 673,446 bushels of Indian corn, 131,975 of sweet potatoes, 87,645 lbs. of rice, and 18,709 bales of cotton. There were 9 churches, and 452 pupils attending schools. Capital, Camden.

WILCOX, Carlos, an American clergyman and poet, born in Newport, N. H., Oct. 22, 1794, died in Danbury, Conn., May 29, 1827. Being incapacitated for farm labor by an injury of the knee in his 10th year, he was sent to Middlebury college, Vt., and was graduated in 1813, and at the Andover theological seminary in 1817. During his residence at Andover he had projected an epic poem in 5 books entitled "The Age of Benevolence," to which he seriously devoted himself, preaching and studying a part of the time, for the next 4 years. In 1822 he published the first book at his own expense. In 1824 he delivered a poem before the Phi Beta Kappa society of Yale college, on "The Religion of Taste." The same year he became pastor of the North Congregational society of Hartford, Conn., but was obliged to retire from that charge in 1826 on account of his health. His "Age of Benevolence," so far as completed, being the whole of the first and portions of the 3 following books, his "Religion of Taste," and 14 of his sermons, with a memoir by the Rev. Lavius Hyde, were published in Hartford, under the title of "Remains of the Rev. Carlos Wilcox," in 1828.

WILD CAT. See Cat.

WILD CAT, American. See Bay Lynx.

WILDE, Richard Henry, an American author and statesman, born in Dublin, Ireland, Sept. 24, 1789, died in New Orleans, Sept. 10, 1847. His father, a hardware merchant of Dublin, emigrated to America in 1797 and established himself in Baltimore; and upon his death in embarrassed circumstances in 1802 his widow removed to Augusta, Ga., where she supported her family by keeping a small shop. Richard was indebted for his early education to his mother, and having by his unaided exertions qualified himself for the practice of the law, was in 1809 admitted a member of the Georgia bar. In 1815 he was elected a member of congress, having previously held the office of attorney-general of Georgia. He subsequently served in congress from 1828 to 1835, establishing a high reputation as a polished speaker, and in the latter year went abroad and passed 5 years in Europe, principally in Italy. He made minute researches among the archives of the Medici family in Florence, to which free access was given him; and from the discovery of a number of documents throwing light upon the life and times of Dante, he was induced to attempt a biography of the poet, of which he completed one volume in manuscript. He was also instrumental in discovering Giotto's portrait of Dante painted on the wall of the chapel of the Bargello, which had been whitewashed over. He made at the same time a special study of the life and character of Tasso, and upon his return to America published "Conjectures and Researches concerning the Love, Madness, and Imprisonment of Torquato Tasso" (2 vols. 12mo., New York, 1842), which contains a number of original translations of the poems of Tasso. In 1844 he removed to New Orleans, where he was appointed professor of common law in the university of Louisiana, and was engaged in the practice of his profession until his death. He was a contributor of verse to various southern periodicals, and several of his occasional songs have obtained considerable popularity. That commencing "My Life is like the Summer Rose" is the most familiar. His miscellaneous writings, including specimens from the Italian poets and original poems in manuscript, have not yet been collected for publication.

WILDEBEEST. See Gnu.

WILDER, Marshall Pinckney, an American merchant and agriculturist, born in Rindge, N. H., Sept. 22, 1798. He has been a merchant in Boston since 1825, but is best known by his efforts in the advancement of horticulture, pomology, and agriculture. He was one of the originators and for 8 years president of the Massachusetts horticultural society; one of the original members and for a long time president of the American pomological society; and one of the founders of the Norfolk county agricultural society. As president of the state senate he exerted himself to procure the establishment of the Massachusetts board of agriculture. In June, 1852, he issued a circular for a national convention, by which the United States agricultural society was organized at Washington, D. C. Of that society he has from the first been president.

WILFRED, Saint, bishop of York, born of a noble family in 634, died April 24, 709. Having been led to theological studies by residing in his youth in a monastery in Lindisfarne, he made a journey to Rome when 19 years old, in order to obtain a solution of the differences between the Scottish church and the rest of the Christian world with regard to the time of celebrating Easter. On his return he spent three years with Delfinus, archbishop of Lyons, who would have designated Wilfred as his successor, but for his assassination in 660, when Wilfred himself had a narrow escape. Returning to England, he obtained from Alchfred, king of Northumbria, a grant of land, and a monastery at Ripon, where in 664 he was ordained priest. In the same year he took a prominent part in the famous conference of Whitby, at which he obtained from the king a decision in favor of substituting the Roman usage for that of the Scottish church in the celebration of Easter. The king also nominated him bishop of York. In order to obtain the episcopal consecration from bishops who were not suspected of heterodoxy on the Easter question, Wilfred went to Gaul, where he was consecrated by the bishop of Paris, and remained about two years. On his return he found that the see of York had been filled during his absence by Ceadda, an adherent of the Scoto-Irish party, and Wilfred did not obtain possession until Archbishop Theodore of Canterbury, who had been sent to Britain from Rome, decided in his favor in 669. King Egfred, the successor of Alchfred, was an enemy of Wilfred, and in 678 divided his bishopric into three. Wilfred appealed to Rome, and obtained from Pope Agatho and a synod of 50 bishops a decision in his favor. On his way to Rome he spent some time in Friesland, in order to preach to the pagans of that country. He returned to England in 680, with the papal decree; but King Egfred imprisoned him for 9 months, and then exiled him. Wilfred preached for some time to the pagans of Sussex, but some years later, after the death of Egfred, he obtained possession of the three episcopal sees which had been formed out of the bishopric of York. Yet the quarrel between him and the bishops of the Scottish party continued; a synod in 692 again declared in favor of a division of the bishopric of York; and though Wilfred again proceeded to Rome and again obtained a papal decision in his favor (703), he was not restored to his see. He spent the last years of his life in a monastery.

WILIBALD ALEXIS. See Häring.

WILKES. I. A N. W. co. of North Carolina, intersected by the Yadkin river; area, 864 sq. m.; pop. in 1860, 14,749, of whom 1,208 were slaves. The Blue ridge extends along the N. W. border, and the surface of the county is diversified by mountains and valleys. The soil of the latter is very fertile, and that of the mountains is well adapted to pasturage. The productions in 1850 were 14,440 bushels of wheat, 408,150 of Indian corn, 68,882 of oats, 29,208 of sweet potatoes, and 108,812 lbs. of butter. There were 96 grist mills, 30 saw mills, 48 churches, and 2,419 pupils attending public schools. There is a great abundance of iron ore, and bituminous coal is found. Capital, Wilkesborough. II. A N. E. co. of Georgia, bounded N. by Broad river and S. by Little river, and drained by their branches; area, 550 sq. m.; pop. in 1860, 11,420, of whom 7,953 were slaves. The surface is undulating and the soil only moderately fertile. The productions in 1850 were 12,649 bushels of wheat, 418,176 of Indian corn, 133,213 of oats, 59,525 of sweet potatoes, 71,381 lbs. of butter, and 12,024 bales of cotton. There were 17 churches, and 451 pupils attending schools. Iron ore, granite, and quartz are found. Capital, Washington.

WILKES, Charles, an American naval officer and explorer, born in the city of New York in 1801. He entered the navy as midshipman in 1816, and his earliest important service was with Com. McDonough on the Mediterranean station in 1819–'20. He was with Com. Stewart in the Pacific in 1821–'3, where he exhibited so much nautical skill as to be selected for a separate command. In April, 1826, he was promoted to be lieutenant. In 1830 he was appointed to the depot of charts and instruments, when he was the first in the United States to set up fixed astronomic instruments and observe with them. The observatory was in his own garden, where he was prevented from enclosing in a permanent structure the stone piers to which his instruments were attached, by an informal notice from the navy department that a national observatory was unconstitutional. From this post he was detached to the survey of George's Bank, which difficult operation he accomplished with great success, relieving the minds of navigators from one of their greatest terrors. After an exploring expedition for the examination of the southern seas had been more than once projected, and had been as often abandoned, the organization and command of a squadron for this purpose were finally intrusted to him. The expedition was composed of 5 vessels accompanied by a store ship. Leaving Norfolk, Va., Aug. 18, 1838, it proceeded to Madeira, and thence by the way of the Cape Verds to Rio Janeiro. The whole squadron then sailed *via* Rio Negro to Orange harbor in Terra del Fuego. Here the flag ship was moored, and two divisions formed of the remaining 4 vessels, for a southern expedition. One of the divisions was in command of Lieut. Wilkes himself, the other of Lieut. Hudson. On the reunion of the squadron, the whole proceeded to Valparaiso, and thence to Callao. From Callao the squadron passed through the Paumotoo group to Tahiti, visiting islands not before known. Lieut. Wilkes next proceeded to the Samoan group, which he surveyed and explored, and thence by the way of Wallis island to Sydney, New South Wales. Leaving Sydney Dec. 26, 1839, the vessels proceeded separately to the southward, when all reached the icy barrier, and 3 of them were rewarded with a sight of the hitherto unknown antarctic continent. Along the barrier, and in sight of the land, the flag ship continued its course westward through more than 70 degrees of longitude. This discovery was subsequently confirmed by both French and English authorities. After a visit to New Zealand, which was left April 6, 1840, and calling at Tongataboo, the time, up to Aug. 1840, was spent in a complete exploration of the Feejee group. Here a nephew of the commander was killed by the cannibal natives, and prompt vengeance inflicted upon them. The result of these operations has been to open these islands to the visits of navigators and the influence of missions. A visit to the Hawaiian group succeeded, during which the very difficult and important process of measuring the pendulum on the summit of Mauna Loa was performed by the commander in person. He subsequently visited the N. W. coast of America, and the Columbia and Sacramento rivers (1841), made explorations by land in California, and on Nov. 1 set sail from San Francisco, visited Manila, Sooloo, Borneo, Singapore, the Cape of Good Hope, and the island of St. Helena, and on June 10, 1842, cast anchor in New York harbor. The next month he was promoted to be commander. In the same year a long list of charges was preferred against him by certain of his officers, and investigated by a court martial, which acquitted him of all except illegally punishing some of his crew, for which he was sentenced to a reprimand. The history of the 4 years' cruise was written by Commander Wilkes, under the title of a "Narrative of the U. S. Exploring Expedition, during the years 1838, 1839, 1840, and 1842" (5 vols. imperial 8vo., Philadelphia, 1845), forming the first of the series of reports of the expedition. Of the remaining 11 volumes, giving its scientific results, of which only 100 copies were printed (4to., with several folio atlases of maps and illustrations), he was the author of that on meteorology. In 1849 he gave an account of his observations in California and Oregon in a volume entitled "Western America" (8vo., Philadelphia). In 1856 he published his "Theory of the Winds" (8vo., New York). In 1855 he was made captain. He next came prominently before the public in 1861, when he was sent to the West Indies in the frigate San Jacinto to look after the confederate steamer Sumter. On Nov. 8 he took the responsibility of forcibly removing from the British mail steamer Trent, in the Bahama channel, Messrs. Slidell and Mason, commissioners of the southern confederacy to France and England, and conveyed them to Boston. His course was loudly applauded by the people, a public banquet was given to him in Boston, and he received a vote of thanks from congress; but it was finally disapproved by the president. (See UNITED STATES.) On the reorganization of the navy department in the summer of 1862, he was promoted to the rank of commodore, and placed first on the list. He was then assigned to the command of the flotilla in the James river, and on Aug. 28 shelled and destroyed City Point, from which place the confederate troops had attacked the U. S. transports in the river. He was subsequently appointed acting rear admiral, and sailed in command of a squadron for the West Indies, to protect American commerce.

WILKES, JOHN, an English politician, born in Clerkenwell, London, Oct. 17, 1727, died in London, Dec. 27, 1797. He was the son of Israel Wilkes, a rich distiller, and, after having been educated at Hertford and Aylesbury, was sent with a private tutor to finish his studies at Leyden. Here he acquired a decided taste for classical learning, and in subsequent years translated some of the poems of Anacreon, and printed editions of the "Characters" of Theophrastus and of the poems of Catullus. Returning to England in 1749, he married Miss Mead, a wealthy lady of Buckinghamshire, 10 years older than himself, from whom he was afterterward separated at her demand. After the divorce she brought a suit to compel him to discharge an annuity which he had agreed to pay her, and his character suffered much from the trial. In 1757 he entered parliament for Aylesbury, and was reëlected by the same constituency in 1761. The following year he published anonymously a pamphlet entitled "Observations on the Papers relative to the Rupture with Spain, laid before both Houses of Parliament on Friday, Jan. 29, 1762." A paper called "The Briton" was at that time earnestly engaged in the defence of the administration of Lord Bute, and Wilkes in June of this year started the "North Briton," for the purpose of assailing it. The power and bitterness with which he attacked Lord Bute materially hastened the minister's downfall. Lord Bute was succeeded by George Grenville, but was suspected of being still the controlling spirit in the ministry, and the "North Briton," in the editing of which Wilkes is said to have been assisted by Lord Temple and the poet Churchill, continued its attacks upon the government. The folly of his enemies now made Wilkes a popular idol. In the speech at the closing of the session of parliament, the king claimed for himself the merit of the peace which Frederic the Great of Prussia had just concluded, and with which the 7 years' war was ended. In the 45th number of his paper, Wilkes charged the monarch with having uttered a falsehood. The king, on the ground that one of his subjects had given him the lie, demanded protection; and Lord Halifax, one of the secretaries of state, issued a general warrant for the arrest of the authors, printers, and publishers of the "North Briton," as a seditious and treasonable paper. Wilkes was arrested, and, refusing to answer any questions, was committed to the tower; but in a few days he was brought before the court of common pleas on a writ of *habeas corpus*, and discharged by Chief Justice Pratt, afterward Lord Camden, on the plea that his privilege as a member of parliament had been violated. In Nov. 1763, parliament met again, and declared the paper in question to be a false, scandalous, and seditious libel, ordered it to be burned by the common hangman, and passed a special law to sanction the author's prosecution. The cause of Wilkes was earnestly taken up by the common people, and when the attempt was made to burn the obnoxious number of the "North Briton," a riot ensued. Shortly afterward the suit which Wilkes, on his liberation from the tower, had brought against the under secretary of state for the seizure of his papers, came on for trial; and the jury brought in a verdict for the plaintiff with £1,000 damages. It was on this occasion that Pratt declared general warrants to be "unconstitutional, illegal, and absolutely void." In the mean time Wilkes had been wounded in a duel with Martin, the member for Camelford, caused by some passages in his paper, and on Jan. 29, 1764, was expelled the house for writing the libellous No. 45. In the upper house he was accused of being the author of an obscene poem entitled an "Essay on Woman," to the notes upon which the names of Dr. Stone, archbishop of Armagh, and Warburton, bishop of Gloucester, had been affixed. He was tried, before Lord Mansfield, and found guilty, and as he did not appear to receive sentence, having fled to France, was outlawed. The trial had not produced the looked for effect. Wilkes's character was already too bad to be blackened by a conviction for immorality, and the ministry incurred no little odium by the surreptitious means they had resorted to in order to obtain the book, only 12 copies of which were printed. Wilkes spent 4 years travelling on the continent, and published at Paris in 1767 a pamphlet entitled "Collection of the Genuine Papers, Letters, &c., in the Case of J. Wilkes, late Member for Aylesbury." On a change of the ministry he ventured to return to England in 1768, and was elected to parliament from the county of Middlesex by a large majority. As soon as he was returned, he gave himself up to the court of king's bench. The court refused to commit him. He was immediately rearrested, but was rescued from the officers by the mob. Too prudent to take advantage of this act, he voluntarily went into confinement as soon as the tumult was quelled. When parliament met on May 10, a large crowd assembled in front of his prison for the purpose of carrying him in triumph to the house of commons. A riot followed, the military were ordered out, and several of the mob were shot. This occurrence was called by the populace "the massacre in St. George's fields." Lord Mansfield afterward reversed the sentence of outlawry, but Wilkes was convicted of two libels, fined £1,000, and sentenced to 22 months' imprisonment. Having charged Lord Weymouth with planning "the horrid massacre in St. George's fields" weeks beforehand, he was again expelled the house of commons, and a new election was ordered for Middlesex. Wilkes was returned without opposition, but the house declared him incapable of sitting. Three other elections took place with the same result, and at last the house declared Wilkes's opponent, Col. Luttrell, elected, though he had received only 300 votes, on the ground that the votes for Wilkes were void from his incapacity to serve. This measure awakened intense indignation throughout the whole country. The contest between Wilkes and the ministry became a contest for the preservation of the rights of the people. Wilkes, though in prison, was at the height of his popularity. Presents of jewelry, furniture, wines, and plate were forced upon him, and the sum of £20,000 was raised to pay off his debts. In Nov. 1769, a jury gave him damages of £4,000 against Lord Halifax for false imprisonment and seizure of his papers. In April, 1770, he was freed from his imprisonment and elected alderman of the city of London. During his magistracy the house of commons offered a reward for the arrest of certain printers who had refused to appear at the bar and answer for publishing the speeches of the members. One of them was brought before Wilkes, who not only discharged him as illegally arrested, but committed to prison the officer who apprehended him. He was twice commanded to attend at the bar of the house, but refused to appear except in his place as member for Middlesex. The house finally evaded the contest by summoning him to be present on April 8, and adjourning to the 9th. In 1771 he was chosen sheriff, and in 1774 mayor. In October of that year he was elected from Middlesex a member of the new parliament. He did not take a conspicuous part in the proceedings, although he strongly opposed all the measures which led to the American war. In 1779 he was elected chamberlain of London, which office he held during the remainder of his life. He made several ineffectual efforts to have the resolutions expelling him from the house of commons expunged from the records, but succeeded in 1782, when the house voted that the resolution passed Feb. 17, 1769, by which he had been declared incapable of being reëlected, should be expunged, "it being subversive of the rights of the whole body of the electors of the kingdom." During the last years of his life he was quite forgotten. Neither his writings nor his speeches were of a high order, but he had learning, taste, and wit, and was very agreeable in society, though he squinted and lisped, and his features were ugly. His "Letters to his Daughter" from the year 1774 to 1796 were printed in 1804; and in 1805 Almon published his correspondence in 5 volumes, with a biography.

WILKESBARRE, a borough and the capital of Luzerne co., Penn., situated on the E. bank of the North branch of the Susquehanna, here crossed by a handsome bridge, 116 m. N. from Harrisburg; pop. in 1860, 4,278. It has 10 churches (1 Baptist, 1 Episcopal, 1 German Reformed, 1 Jewish, 1 Lutheran, 2 Methodist, 1 Presbyterian, and 2 Roman Catholic), an academy, 3 high schools, 17 public schools, a "home for the friendless," 3 newspaper offices, a bank, 2 founderies and machine shops, 2 planing mills, 2 breweries, and manufactories of wire screens, soap and candles, sashes, kegs, &c. It also possesses a library and Athenæum, and a historical and geological society with a fine collection of coins and medals, and is the centre of an active business in anthracite coal. It is lighted with gas and supplied from the Laurel run with good water. The North branch division of the Pennsylvania canal passes through the borough. The Lehigh and Susquehanna railroad extends from Wilkesbarre to White Haven, and the Lackawanna and Bloomsburg railroad passes along the opposite bank of the river. The borough was named in compliment to John Wilkes and Col. Barré.

WILKIE, Sir David, a Scottish painter, born in Cults, Fifeshire, Nov. 18, 1785, died at sea near Gibraltar, June 1, 1841. He was the son of a minister of the church of Scotland, and evinced in childhood a remarkable taste for painting, having, it is said, been able to draw before he could read. At 14 years of age he was placed in the trustees' academy in Edinburgh, where he remained 5 years, and gained a prize of 5 guineas for the best picture of "Calisto in the Bath of Diana." After painting portraits for a while in Fifeshire, he repaired to London in May, 1805, and entered himself a student at the royal academy. His picture of the "Village Recruit" soon found a purchaser at the modest sum of £6; and the "Village Politicians," for which the earl of Mansfield rather grumblingly paid him £30, excited general admiration at the academy exhibition of 1806. Commissions thenceforth flowed in upon him, and he determined to abandon his original intention of returning to Scotland, and settle in the metropolis. Within the next few years he produced the "Blind Fiddler," the "Rent Day," the "Cut Finger," the "Ale House Door" (called also the "Village Festival," and now in the national gallery), and other works widely known through engravings; and in 1809 he was elected an associate of the royal academy, and in 1811 an academician. The admirable composition and native humor of these works, together with their technical merits, began to attract universal attention to Wilkie, notwithstanding the sneers of rival academicians at what they called his "pan-and-spoon style;" but owing to the moderate prices he asked, and the slowness with which he worked, his income was far from considerable. In 1812 he opened an exhibition of his pictures and sketches, 29 in number, which however proved a source of positive loss; and in the latter part of the same year he was compelled by the death of his father to become the sole support of his mother and sister, who came to London to live with him. In 1813 he painted for the prince regent "Blindman's Buff," followed within the next 3 or 4 years by the "Letter of Introduction," "Distraining for the Rent," and the "Rabbit on the Wall," all executed in his best style. In 1817 he visited Scotland, whither his fame had preceded him, and painted the well known group of "Sir Walter Scott and his Family." The Ettrick shepherd, whose guest he was on one occasion, exclaimed upon meeting him: "I cannot tell how glad I am to see you are so young a man;" which Scott declared was "the finest compliment ever paid to man." After his return to England he painted the "Penny Wedding" for the prince regent, "Reading the Will" for the king of Bavaria, the "Whiskey Still," and other characteristic works; and during the greater part of 1820 and 1821 he was busied on his greatest work, "Chelsea Pensioners listening to the News of Waterloo," executed for the duke of Wellington, and for which he received £1,200. It is a masterpiece of color, composition, and execution, rivalling in these respects the finest efforts of the Dutch school, and attracted so much admiration at the academy exhibition of 1822 that it was found necessary to put a railing in front of it, to keep off the spectators. Up to this period the reputation of Wilkie had grown with every year, and, it may be said, with every new work; but his subsequent productions, essentially different in subject and treatment, are, with some exceptions, inferior to those which preceded. In his peculiar style he was unrivalled, but in the style which he now adopted he had both rivals and superiors. One of the least creditable of these late pictures was the "Entrance of George IV. into Holyrood," some of the most obvious defects in which, however, are due to the suggestions of the king, which the artist found it necessary to follow. The commission for this picture was given to him in 1822, but it was not executed until 1830. In 1823 he was appointed to succeed Sir Henry Raeburn as limner to the king in Scotland; and in 1825, being in ill health and much depressed by the recent death of his mother, he set out on a protracted continental tour, in the course of which his new style was developed and confirmed. During the next 3 years he made long sojourns in the chief art capitals of Italy, Germany, and Spain, receiving many flattering attentions, and bestowing profound study upon the works of the old masters; and in June, 1828, returned to England. The visit to Spain was in the highest degree influential upon his future course as an artist; and from the study of Velasquez, Murillo, and other great Spanish masters, he was inspired with the resolution to be less fastidious and more rapid in execution than before, in which he was encouraged by his fellow artists and the numerous titled visitors who thronged his studio in Madrid. He had however occasional misgivings whether, in adopting a freer and, as he conceived, a more effective style, he was acting in harmony with his genius and tastes; and upon finishing a picture in the short space of 10 weeks he sat down astonished at his own rapidity, and, it may be, at his temerity. Eight pictures painted during his absence, including the well known "Maid of Saragossa," were sent to the academy exhibition of 1829; but notwithstanding the encomiums of George IV., who purchased 5 of them, and of other friends and patrons of the artist, the public verdict was not in his favor, and general regret was expressed that he had abandoned the minute and laborious finish and the homely subjects of his earlier pieces, to paint Italian *pifferari* or scenes from the Spanish war of independence, after the manner of Rembrandt, Murillo, and Velasquez, as his flatterers would have him believe. Upon the death of Sir Thomas Lawrence in 1830 he was made painter in ordinary to the king, and in the same year he exhibited his full-length portrait of George IV. in a highland dress. Within the next 10 years he produced a considerable number of pictures, including "John Knox preaching the Reformation in St. Andrew's," "Christopher Columbus submitting the Chart of his Voyage for the Discovery of the New World to the Spanish Authorities," the "Peep-o'-Day Boy," "Mary, Queen of Scots, escaping from Loch Leven," "Sir David Baird discovering the Body of Tippoo Sahib," and "Benvenuto Cellini submitting a Vase to the inspection of Pope Paul III.," beside portraits of William IV., Queen Victoria, the duke of Wellington, and other distinguished persons, most of which are well known by engravings. The works themselves, like most executed in his later style, are rapidly perishing, while his early pictures are as fresh as when they left the easel. In the autumn of 1840 he set out with a friend on a journey to the East, painted a portrait of the sultan at Constantinople on the way, passed some time in Jerusalem and the Holy Land, and died on his voyage home, and was buried at sea. A statue of him, raised by public subscription, was subsequently placed in the national gallery. His life has been written by Allan Cunningham (3 vols. 8vo., 1843).

WILKIE, William, a Scottish poet and divine, born at Echlin, parish of Dalmeny, Linlithgowshire, Oct. 5, 1721, died Oct. 10, 1772. He entered the university of Edinburgh at the age of 13, but before his studies were completed his father died, and left him a farm, on which he worked, continuing his studies; and in 1753 he was ordained assistant and successor to the clergyman of Ratho, near Edinburgh. In 1759 he was made professor of natural philosophy at St. Andrew's. He wrote the "Epigoniad," a poem in 9 books, and a volume of "Moral Fables" in verse.

WILKINS, Sir Charles, an English orientalist, born at Frome, Somersetshire, in 1749, died in London, May 13, 1836. He went to Calcutta in 1770 as a writer on the Bengal establishment, employed his leisure time in the study of Bengalee, Arabic, Persian, Sanscrit, and other eastern languages, and in 1778 cut the matrices, cast the type, and superintended the printing of Halhed's Bengalee grammar, for which the best workmen in London had found themselves unable to produce the type. He afterward formed the matrices for a font of Persian type in the same way. In 1784, in connection with Sir William Jones, he established the literary society of Calcutta, whose "Asiatic Researches" have ever been highly regarded by philologists. In 1785 he completed his translation of the *Bhagavat Gita*, which was published at the expense of the East India company. The next year he was compelled by the state of his health to return to England, and in 1787 published a translation of the *Hitopadesa*, the Sanscrit original of the fables of Bidpay or Pilpay. He then commenced an elaborate Sanscrit grammar, and, after making the matrices and casting his type, had set up 20 pages of it when his house was burned, and his type and the portions of the book already printed were destroyed. The loss thus sustained was not repaired till 1806, when, the East India college at Hertford being established, Mr. Wilkins printed the grammar for the use of its pupils. In 1801 he was appointed librarian of the East India company, and in 1805 visitor and examiner of the students in the oriental departments of Haileybury and Addiscombe colleges. He was knighted in 1823 by George IV., and in 1825 received the gold medal of the royal society of literature. He edited Richardson's Arabic and Persian dictionary (London, 1806-'10), and published "The Roots of the Sanscrit Language" (1815), and several papers in the "Asiatic Researches," the "Annals of Oriental Literature," and the "Oriental Repertory." He had nearly completed a translation of the "Institutes of Manu" when he abandoned it on learning that Sir William Jones was engaged upon it.

WILKINS, John, an English prelate and mathematician, born at Fawsley, near Daventry, Northamptonshire, in 1614, died in London, Nov. 19, 1672. He was graduated at Magdalen hall, Oxford, in 1631, became chaplain successively to Lord Say, Lord Berkeley, and Charles, count palatine of the Rhine, signed the "Solemn League and Covenant," and during the civil war formed with the aid of Dr. Wallis and others a club, which was the nucleus of the royal society. In 1648 he was appointed warden of Wadham college, Oxford. In 1656 he married the widowed sister of Oliver Cromwell, having first received from Cromwell a dispensation from the rules of the college which required celibacy in the warden. In 1659 Richard Cromwell made him master of Trinity college, Cambridge. At the restoration he was ejected from his mastership, and remained out of favor with the court for some time, but was chosen preacher to the society of Gray's Inn. In 1662 Charles II. presented him to the rectory of St. Lawrence, Jewry, London, and on the formation of the royal society the next year he was made one of the council. He was not long after appointed dean of Ripon, and in 1668 bishop of Chester. His principal works are: "The Discovery of a New World," containing arguments to prove the moon habitable (4to., London, 1638); "Discourse concerning the Possibility of a Passage to the World in the Moon" (1640); "Discourse concerning a New Planet" (1640); "Mercury, or the Secret Messenger," an essay on modes of telegraphing (1641); "Ecclesiastes, or a Discourse on the Gift of Preaching" (1646); "Mathematical Magic, or the Wonders that may be performed by Mechanical Geometry" (1648); "Essay toward a Real Character and a Philosophical Language" (1668); and "Principles and Duties of Natural Religion" (1675). He also invented and described the perambulator and measuring wheel.

WILKINSON. I. A central co. of Georgia, bounded N. W. by the Oconee river and drained by its affluents; area, 430 sq. m.; pop. in 1860, 9,376, of whom 3,887 were slaves. The surface is undulating and diversified by extensive pine forests, and the soil is moderately fertile. The productions in 1850 were 12,149 bushels of wheat, 323,976 of Indian corn, 99,490 of sweet potatoes, 16,614 lbs. of rice, and 4,920 bales of cotton. There were 23 churches, and 460 pupils attending public schools. Sulphur and chalybeate springs are found. The county is intersected by the Georgia central and the Milledgeville and Eatonton railroads. Capital, Irvington. II. A S. W. co. of Mississippi, bordering on Louisiana, bounded W. by the Mississippi river, and N. by the Homochitto; area, 580 sq. m.; pop. in 1860, 15,935, of whom 13,132 were slaves. It has an uneven surface, and the soil is extremely fertile. The productions in 1850 were 504,795 bushels of Indian corn, 33,720 of sweet potatoes, 17,690 lbs. of rice, and 26,381 bales of cotton. There were 13 churches, 2 newspaper offices, and 400 pupils attending public schools. The county is intersected by the West Feliciana railroad. Capital, Woodville.

WILKINSON, James, an American general, born in Maryland in 1757, died near the city of Mexico, Dec. 28, 1825. He studied medicine in Philadelphia, and commenced practice in his native state, but when the revolution broke out joined a rifle company before Boston, and in Sept. 1775 was appointed captain in a New Hampshire regiment. The next year he joined Arnold in Canada. He made the campaign of 1777 as adjutant-general on the staff of Gen. Gates with the rank of lieutenant-colonel, and in November of that year was brevetted a brigadier-general. In the following January he became secretary of the board of war. He quarrelled with and challenged Gates, but the duel was prevented by their friends; and when Gates became president of the board of war he resigned his secretaryship. The jealousy of officers who had felt themselves slighted by his promotion also induced him to throw up his brevet. He was now unemployed until July, 1779, when he became clothier general to the forces. After the peace he settled at Lexington, Ky., as agent of a commercial company in Philadelphia, and may be said to have founded the trade between that region and New Orleans. In 1791 he was appointed colonel of an expedition against the Wabash Indians, in November of the same year lieutenant-colonel of the 2d regular infantry, and in March, 1792, brigadier-general. He commanded the right wing of Wayne's army at the battle of the Maumee, Aug. 20, 1794. In Dec. 1796, he became general-in-chief of the army, with his head-quarters at Pittsburg, and in 1798, on the organization of the territory of Mississippi, fixed his head-quarters at Natchez. He was one of the commissioners for receiving possession of Louisiana in 1803, was governor of that territory in 1805-'6, was next employed in protecting the S. W. frontier from invasion by the Spaniards, who had assembled a large body of troops on the E. boundary of Texas, and afterward went to New Orleans and was actively employed in breaking up the plans of Aaron Burr. The friends of Burr procured an investigation into his official conduct, which resulted in his favor, and he was ordered back to New Orleans, first visiting Havana on a special mission. He was again superseded in Dec. 1809, and in July, 1811, tried by court martial on charges of having received bribes from Spain and connived at the designs of Burr. He was acquitted, and returned to New Orleans in 1812, a few days before the declaration of war. In March, 1813, he was promoted to be major-general. The next month he reduced Mobile, and in May was removed to the northern frontier. His operations against Canada were totally unsuccessful, in great measure because he could not agree with the other American commander in that neighborhood, Gen. Wade Hampton. In Feb. 1814, the secretary of war preferred charges against Wilkinson, and recommended that a court of inquiry should examine into his conduct. He was accordingly superseded, and ordered to consider himself under arrest, and to reside in Philadelphia, Baltimore, or Annapolis. When Washington was menaced by the British, he offered, if his arrest was suspended, to take command of the militia and save the city, but no notice was taken of the offer. He was tried by court martial at Troy in January to March, 1815, and honorably acquitted. On the reduction of the army the same year he was one of the 1,800 officers discharged. Retiring to Germantown, Penn., he employed himself in writing his "Memoirs," which were published in 1816 (3 vols. 8vo.). Subsequently he went to Mexico, and 3 or 4 months before his death obtained from the Mexican government a grant of land in Texas.

WILKINSON, Jemima, a religious impostor, born in Cumberland, R. I., in 1753, died at Jerusalem, Yates co., N. Y., July 1, 1819. She was educated as a Quaker. At the age of 20 she had a severe attack of fever, and on her recovery professed that she had been raised from the dead, that her carnal life was ended, and that henceforth her body was reanimated by the spirit and power of Christ. She professed to work miracles, and, though entirely illiterate, induced a considerable number of intelligent people to become her followers. Her attractive person and extraordinary tact and shrewdness aided her in maintaining the imposture. In 1786, at a meeting of her disciples, it was resolved that they should remove to a new country and found a colony. Accordingly 3 of their number were sent out and fixed upon a place in Yates co., N. Y., in the present town of Torrey. The next year 25 of her followers went to the new purchase, and prepared the land for wheat. In 1789 two of the number purchased 14,000 acres of land in that vicinity, to which was afterward added the town of Jerusalem. The same year Jemima and a large number of her followers came, and she occupied a house which had been erected for her. She had taken the name of the "universal friend," and assumed a costume which belonged about equally to either sex, as she asserted that in her spiritual body there was no sex. She was accompanied by two "witnesses," whose names were Sarah Richards and Rachael Miller. She exacted from her followers the most complete submission and the most menial services, and exerted a powerful influence over them. A farm of 1,000 acres was set apart for her special use, and cultivated freely by her followers. She insisted on the Shaker doctrine of celibacy, and the exercises of her religious meetings resembled those of that sect. She never relinquished her pretensions, but after some years her influence waned, and the latter part of her life was embittered by jealousies and annoyances which she bore with no great fortitude. After her death the sect was entirely broken up.

WILKINSON, Sir John Gardner, an English archæologist, born Oct. 5, 1797. He was educated at Harrow school and at Exeter college, Oxford, and on leaving the latter place endeavored to procure a commission in a cavalry regiment. But his attention having been directed by Sir William Gell to the study of antiquities, he went to Egypt, and during a residence in that country of 12 years made a profound study of its ruins and topography, as also of the languages, manners, and customs of the modern inhabitants. A very considerable portion of his time was devoted to making drawings of the stupendous architectural monuments, the paintings, hieroglyphics, and other objects of interest. In 1828 he published at Malta his "Materia Hieroglyphia," followed by his "Topography of Thebes and General View of Egypt" (London, 1835), and in 1836 by the first series of his great work, entitled "Manners and Customs of the Ancient Egyptians, including their private Life, Government, Laws, Arts, Manufactures, Religion, Agriculture, and early History, derived from a Comparison of the Paintings, Sculptures, and Monuments still existing, with the Accounts of Ancient Authors" (3 vols. 8vo.). The 2d series was published in 1840 in 2 vols., and the whole work is esteemed a monument of learning, careful research, and judicious analysis. In acknowledgment of his services to archæological literature, the author received in the same year the honor of knighthood. In 1843 appeared his "Modern Egypt and Thebes" (2 vols. 8vo.), intended chiefly for the use of travellers, and in 1847 the 3d edition of his "Manners and Customs of the Ancient Egyptians" (5 vols.), illustrated with upward of 600 plates and woodcuts. In the latter year appeared also a new edition of his "Modern Egypt," published by Murray in a condensed and corrected form under the title of "A Hand-Book for Travellers in Modern Egypt." In 1848 he published "Dalmatia and Montenegro" (2 vols. 8vo.), the result of a tour made in those countries in 1844; to which succeeded the "Architecture of Ancient Egypt," &c. (8vo., 1850), accompanied by a large volume of plates; "Fragments of the Hieratic Papyrus at Turin" (1851), with a folio volume of plates; and an abridgment of his large work entitled "A Popular Account of the Ancient Egyptians" (2 vols. 12mo., 1854), which comprised much additional matter derived from recent explorations and discoveries. In 1855-'6 he revisited Egypt, and on his return to England published a small volume entitled "The Egyptians under the Pharaohs," which forms a supplement to the "Popular Account." His last important publication is a treatise on "Color, and the General Diffusion of Taste among all Classes" (1858). He has for many years been employed upon a botanical work entitled "Plants of the Egyptian Desert," and an elaborate "Map of Egypt," neither of which has yet been published. He has also contributed many of the notes to Rawlinson's version of Herodotus, and has published papers in the "Transactions" of the geographical and archæological societies of Great Britain.

WILL, in law, the written instrument wherein a man declares his wishes in respect to the disposition of his property after his death. There is good reason to believe that the right of inheritance, or of descent to the children or kindred of the deceased, was firmly established and allowed earlier than the right of disposition by will. Blackstone says that until "modern times" a man could only dispose of one third of his personal property away from his wife and children, and, in general, no will of lands was permitted until the reign of Henry VIII. It seems, however, to have been the law in those early ages, that a man's "goods," or as we now call it his personal property, was divided at his death, if he left a wife and children, into three parts, his wife taking one, his children jointly one, and the third being at his disposal by his will or testament. If he left a wife and no child, she took one half, and he could dispose of the other; and if he left a child or children, but no wife, they took one half, and he could dispose of the other; and if he left neither wife nor children, he could dispose of the whole. If he died intestate, the king, as *parens patriæ*, took possession of his personals. At first the king administered them through his common officers of justice, but at an early period he gave this power first, perhaps, to the county courts, but either originally or soon to his prelates. The bishops exercised it in their own courts, which were held either by them in person, or by their "ordinary," as the officer discharging this function was called. This word "ordinary" came to mean in England principally an ecclesiastical officer having judicial power. In some parts of the United States it is used as the designation of the judge who has jurisdiction in the matter of wills and administration. He is also in some states known by the title of surrogate, in others is called a judge of probate, and in others register of wills. The bishops were accountable to no one for their conduct. It would seem, however, that the half or two thirds going to the wife and children were always secured to them, but that the bishops often, perhaps commonly, took the remaining half or third "for pious uses," that is, to themselves, without even paying the debts of the deceased. This they were compelled to do by the statute of Westminster (13 Edward I.), and afterward the statute 31 Edward III. required them to depute the nearest and most lawful friends of the deceased to administer his goods; and the law of administration in England and in the United States still rests on this basis. In the law of wills, two principles meet, and both have great power, although they would seem to be in direct antagonism. One of these is, that the law favors above all instruments a man's last will, from its desire to carry his wishes, so far as they are lawful, into effect, and from the impossibility of calling on him to explain or rectify the instrument or supply its deficiencies. The law tries to do this for him, because otherwise it cannot be done. The second principle is, that the law, in its strong desire to make it certain that the instrument purporting to express the last wishes of the testator actually is what it purports to be, hedges it around with safeguards and requirements which are unknown in reference to other instruments; and although intended only to keep away false or surreptitious wills, they do of necessity often invalidate actual and honest wills through some defect of form.—We purpose to confine our consideration in this article to the following topics: 1, who may make a will; 2, how a will may be made, or if made, revoked; and 3, how a will is construed by the courts having jurisdiction over it.—The general rule is, that all persons having property may dispose of it by will. To this rule there are however important exceptions, relating principally to infants, persons of insufficient mind, and married women. As to infants, it is enough to say, that at common law they could not dispose by will of real estate, but males of 14 and females of 12 might dispose of personalty. Now however, in England, by statute 1 Victoria, ch. 26, no will made by any person under 21 years of age is valid. The common law is variously modified in the different states of the Union. It may however be said that there is a prevalent tendency toward the rule now in force in England, that it is expressly adopted in many states, and that there are many reasons which favor that rule.—What incapacity of mind invalidates a will, is among the most difficult and most contested questions of law. When the question is asked: What is a sound and disposing mind? all the resources not only of law, but of metaphysics and psychology, have been brought to bear upon it. A few principles seem to be generally adopted, the most important of them being, that the testator must have mind enough for the purpose of making a will; and if he has not this, no power or clearness of intellect in other directions will supply this want; and if he has this, the will is valid, although he may in other respects be feeble or insane. A man may be deaf and dumb and yet make a valid will; nor can it now be said to be impossible that one blind, deaf, and dumb from childhood may do this. In one instance a will disposing in much detail of a large estate was held valid in England, although made by a man in an insane asylum, who never recovered and died there; and the principal reason was the evidence derived from the prudence and sagacity apparent in the provisions of the will. In another case, a lawyer without children, who in the delirium of fever conceived an insane suspicion against his brother, which was never removed although the testator recovered perfect health and sanity in all other respects, made a will disinheriting his brother; and after a jury had decided against the will, the judge ordered a new trial, and urged the jury so strongly in favor of the will, that they yielded. In yet another case, where a father who had a groundless aversion to an only child made a will disinheriting him, the will was set aside in favor of the child.—Wills are not unfrequently set aside because an undue influence was exerted over the mind of the testator. But what influence shall have this effect? It would certainly be no good proof of a man's competency to make a will, that he refused to hear or regard all advice upon the subject. If we examine the best authorities on this point, and look at the question rationally, we cannot say that any influence should be sufficient to invalidate a will, unless it was so strong, and so exerted, as to substitute the will of another for the will of the testator; and, for this purpose, either to silence and suppress the will of the testator, or supply falsely his entire want of will. It seems to be held, that where certain separable provisions of a will were caused by undue influence and not the remainder, those provisions only should be invalidated by this cause.—A married woman cannot, by common law, make any will whatever. This rule arises from that established principle of the feudal system, which merged the rights and almost the existence of the wife in that of the husband. They were but one person in law, and he was that one. But this rule has of late years received much modification in England, and much more in many of the United States; and upon no point more than in reference to her disposition of her property by will. In some of the states her common law disability remains almost entire; in most it is diminished by permitting her to exert some power of disposition over some part of her property; in many the assent of her husband is necessary to the validity of her will; while in some it would seem as if the rule of the Roman civil law was adopted, and a married woman had the same power of making her will as a single woman.—Of incapacity from duress, it is enough to say, as in relation to the invalidity of a will from undue influence, while duress is certainly a sufficient cause for setting a will aside, to have this effect it should be such duress as compelled the testator to express in the instrument which he calls his will, not his own will, but that of another.—No especial form of words is necessary to constitute a will, or a legacy. It is always enough if the language used, however unusual or ungrammatical, convey with distinctness the intention and desire of the testator. Nor need the instrument be called, or in its form appear to be, a will or testament. There are cases in which an instrument appearing on its face to be a deed of gift or of conveyance, or a covenant, or even a letter, has been construed as a will, because it was apparent that it was intended to take effect after the death of the party executing it. As to the execution and attestation of wills, the law is far more stringent. The provisions of the statute of frauds are generally adopted in the United States. The will must be signed in presence of two witnesses, and in many of the states of three. But in a few instances an exception is made where the will is wholly in the handwriting of the testator, especially if it be found among his papers, or disposes of personalty only. A seal is usual, but is not always required by statute, and when not so required is not necessary to the validity of the will. A mark may be a sufficient signature of the testator or a witness; but it is unusual and perhaps unsafe to have a witness who cannot or will not write his name, and is what is called in law a marksman. Against the name of every witness his residence or address should be written, as a great convenience, where it is not required by law; but the absence of this, even where it is required, does not invalidate the will. The attestation must (with the exception of a few states) be in the presence of the testator, but not necessarily in the same room, if he is so placed as to see the act; and he must have sufficient possession of his senses to know and understand the act of attestation. It has been held, where a sick man was able to give rational directions for the drafting of his will, but grew much more ill before he signed it, that if the jury thought he retained sense to be satisfied that his former directions were right, though he did not remember them, and knew that he executed the will, this was sufficient. If he is blind, and the will is read to him and the attestation stated to him in good faith, this is sufficient. Nor is it necessary that he should actually see the attestation if he might do so. The execution of the will must be "published" in the presence of the witnesses; which means that the testator must declare the instrument to be his will, or in some way inform the witnesses of this fact, when they attest it. And it has been held, that the distinct acknowledgment or recognition by the testator of the will, in presence of the witnesses, is equivalent to a signing by him before them. It is usual and convenient for the witnesses to sign in the presence of each other, for then each can prove the signatures of the others, if they are not within reach. But this does not seem, generally at least, to be essential to the validity of the will. So it is usual and proper, but not essential, to write over the signatures of the witnesses a statement of the place, time, purpose, and circumstances of the signatures; and it is a prevailing if not universal rule, that if a witness has no recollection of his attesting the will, but recognizes his name under such a statement as written by himself, and testifies that he should not have written it there had he not known the statement to be true, this will supply his defect of memory.—As to revocation, the common law rule was, that a marriage and the birth of a child after the execution of a will revoked it; and this rule has much force in this country now, although it is variously modified by statute. So, too, it is a general rule, that any children not mentioned in the will or in any wise provided for thereby, take the share of the estate which would come to them if the father had died intestate. The presumption of law in such case was, that they had been forgotten. Hence the old phrase and custom of "cutting off a child with a shilling;" such a legacy proving that he was remembered, and thus depriving him of the benefit of the presumption. But naming him, and refusing to give him any thing, has the same effect. By the statute of frauds, a will was effectually revoked by burning, cancelling, tearing, or obliterating, by the testator himself, or in his presence and by his directions; and it was not necessary that any witnesses should be present. In most, if not all the United States, the same rule prevails, and extends to any voluntary destruction of the will, as it does now by recent statute in England. The cases are numerous on the subject of revocation, and establish or illustrate important principles. One of these is, that no mere intention or desire or even belief of revocation has the effect of revocation, without some act; but a very slight act, a little tearing, or burning, or obliteration, will have this effect, if it is proved to have been done for the purpose and in the belief of cancellation. Another is, that whatever is done, even if it be the actual destruction of the will, will not revoke it, unless the act be done *animo cancellandi.* Therefore the testator must have sufficient mind to know what he does; and consequently, if he destroys it in a fit of insanity, or by mistake for another paper, or without knowing that what he does will have the effect of cancellation, the will is not revoked. In a few instances, this rule has been carried so far as to establish a will actually obliterated or destroyed, when the testator did this in the mistaken belief that a certain deed or other instrument was sufficient of itself, and made the will unnecessary. It may be remarked, however, that a will thus cancelled by mistake is, like a will stolen or lost or destroyed by a casual fire, effectually cancelled in fact, unless its contents and provisions can be proved, by a copy or otherwise, with reasonable certainty and precision. It should be added, that a will is always regarded, in the language of the law, as an ambulatory instrument, or as going always with the testator, and as being open to amendment, variation, or destruction by him, at his own pleasure, during his life; and a will is always revoked by a subsequent will incompatible with the prior will.—If a will be in any way established, and the courts come to the construction of it, they do this with great liberality, and endeavor to give effect to the intentions of the testator, even in disregard of some of the rules of evidence and construction which are applied to other instruments. It is a general rule, that as to the provisions which relate to real property, the law of the place where that property is situated takes effect; and as to personalty, the law of the testator's domicile, modified in some respects by the law of the place where the personalty is situated. It often happens that wills contain provisions repugnant to or irreconcilable with each other; and if such repugnancy exist in a deed or other instrument, it is generally a good ground for avoidance of it. But a will is very seldom, if ever, avoided for this defect. Courts endeavor to reconcile the antagonistic provisions if possible, and will sometimes do this even by the qualification of some of the phraseology. If this however be impossible, it has become an established rule, the main purpose of which may be said to be a prevention of the avoidance of a will, that the clause which is last in place shall be held to be the last in time, and therefore to express the last will or intention of the testator; and a prior clause or provision which cannot be reconciled with it is annulled by it. Still, however, no words are expunged on mere conjecture, or unless absolutely irreconcilable with the context of the will, although the retention of them may lead to seemingly unreasonable consequences. If a devise or bequest be clearly given, and a reason for it also given, which reason is inconsistent with the devise, the reason is not permitted to prevail against the devise. Where the intention of the testator can be gathered from the words used and from the context, the court will supply such words as the testator may seem to have intended but omitted, and even, in some cases, such as are legally necessary to give effect to the provision, although there is no reason to suppose the testator had them in mind. Words limiting or enlarging one devise will not however be supplied by inference to have the same effect upon other devises. Words and names are sometimes transposed, or even changed, where the obvious intention of the testator requires it. Thus "or" is not unfrequently read as "and." In one recent and much discussed English case, not only was "all" changed into "any," but the phrase "without issue" was converted into its exact opposite, "leaving issue." In an interesting American case, a devise of an annuity to the testator's widow, "during her widowhood and life," was held to cease at her second marriage by the testator's intention; but as this intention was *in terrorem*, and against the policy of law because in restraint of marriage, the limitation was void, and the will read as if the words "widowhood and" were not there. It has been said, in some cases, that all conditions in a will which act in restraint of marriage are absolutely void; but a condition that a widow shall not marry, or shall not marry a certain person named, has in other cases been held good. It is indeed quite certain that an annuity or other provision for a wife, "as long as she shall remain my widow," is common, and would probably be regarded as valid by most of the courts of this country, if not by all of them. Still, however desirous courts are, as they should be, to carry into effect the wishes of a deceased person as to the disposition of his property, clauses and provisions are not unfrequently declared to be void, because repugnant to the principles or policy of the law. Thus, the supreme court of the United States held as of no effect a claim requiring a devisee to take an oath before he took possession, that he would not make any change during his life in the disposition of the real estate directed by the will. Yet the construction is sometimes so liberal, as to apply to real estate legal words applicable exclusively to personal estate; and a bequest of the income arising from lands has been held to be equivalent to a devise of the lands. And it is a familiar and well established rule, that where words of grant to a person without the words "and heirs" give to the grantee by deed only an estate for his own life, the same words in a will give to the devisee an estate in fee, because the law supplies the words of inheritance. (See LEGACY, PROBATE, &c.)

WILL, a N. E. co. of Illinois, bordering on Indiana, intersected by the Kankakee and Des Plaines rivers, which unite near its W. border to form the Illinois; area, 1,236 sq. m.; pop. in 1860, 29,321. It has a level surface, consisting mostly of prairie land, and the soil is extremely fertile. The productions in 1850 were 230,885 bushels of wheat, 527,903 of Indian corn, 334,360 of oats, 319,054 lbs. of butter, 50,237 of wool, and 32,043 tons of hay. There were 12 grist mills, 8 saw mills, 14 churches, 3 newspaper offices, and 3,742 pupils attending public schools. Building stone of fine quality is found. The county is traversed by the Illinois and Michigan canal, the Illinois central, the Chicago, Alton, and St. Louis, the Chicago and Rock Island, and Chicago, Burlington, and Quincy railroads. Capital, Joliet.

WILLARD, EMMA (HART), an American authoress and educator, born in Berlin, Conn., Feb. 23, 1787. At the age of 17 she opened a school in her native village, and having resolved to qualify herself for the vocation of a teacher, was for 3 years alternately teaching and attending school. In 1807 she took charge of an academy at Middlebury, Vt., where after about a year she was married to Dr. John Willard. She now gave up teaching, but in 1814, her husband having met with financial reverses, she opened a boarding school at Middlebury, determined henceforth to devote herself to the education of girls. Her school soon attained a high reputation, and propositions were made for its removal to other and larger places. In 1818 she sent to Gov. Clinton of New York a plan for a female seminary, involving state assistance; and in his next message to the legislature the governor strongly urged an appropriation in behalf of female education. An act was passed incorporating a female academy at Waterford, and giving to female academies a share of the literature fund. Mrs. Willard's boarding school was removed to Waterford the ensuing spring, and the "Plan" was published under the title of "An Address to the Public, particularly to the Legislature of New York, proposing a Plan for Improving Female Education." Its circulation in several of the states, and in foreign countries, led eventually to the establishment of female seminaries, aided by state appropriations. The hopes of legislative aid to her seminary were not realized, however, and in May, 1821, it was removed to Troy. In 1825 Mrs. Willard lost her husband. In 1830–'31 she made a visit to Europe, and on her return entered into a scheme for educating a body of Greek female teachers at Athens. The sum of $2,500 was raised for the purpose, $1,100 being the profits on the sale of Mrs. Willard's "Journal and Letters," written and published for the benefit of this charity. In 1838 she resigned the seminary to her son and daughter-in-law, Mr. and Mrs. John H. Willard. With Mr. W. C. Woodbridge she has prepared several very popular school books of geography, with atlases. She has also published a "History of the United States" (1828; revised and continued, 1852); "Poems" (1830); "Universal History in Perspective" (1837); "On the Circulation of the Blood" (12mo., New York, 1844); "Temple of Time, or Chronographer of Universal History" (1844); "Chronographer of English History" (1845); "Chronographer of Ancient History" (1847); "Historic Guide" (1847); "Respiration and its Effects;" "Last Leaves of American History" (1849); "Astronography, or Astronomical Geography;" and "Morals for the Young" (New York, 1857).

WILLARD, Joseph, D.D., LL.D., an American clergyman, and president of Harvard college, born at Biddeford, Me., Dec. 29, 1738, died in New Bedford, Mass., during a journey for the benefit of his health, Sept. 19, 1804. Losing his father at an early age, he seems to have resolved on becoming a sailor, and made several coasting voyages. Being afterward enabled by the generosity of some friends to enter college, he was graduated at Harvard in 1765, and the next year was chosen tutor in that institution. In 1772 he was ordained as colleague pastor, with the Rev. Joseph Champney, of the first church in Beverly. In 1781 he was elected president of Harvard college. His only publications were a few sermons.—Of his two sons, Sidney (died in 1856) was professor of Hebrew and other oriental languages at Harvard college from 1807 to 1831, and Joseph is a lawyer and an active promoter of literature, especially in the department of American history. The first was a copious contributor to the periodical literature of his day, and in 1855 published "Memories of Youth and Manhood" (2 vols. 12mo., Cambridge).

WILLARD, Samuel, D.D., an American clergyman, born in Petersham, Mass., April 19, 1775, died in Deerfield, Mass., Oct. 8, 1859. He was graduated at Harvard college in 1803, was tutor for a short time in Bowdoin college, was ordained pastor of the Congregational church in Deerfield in 1807, and resigned his pastorate in 1829 on account of loss of sight. (See Blind, vol. iii. pp. 357–'8.)

WILLDENOW, Karl Ludwig, a German botanist, born in Berlin in 1765, died there, July 10, 1812. He studied medicine at Halle, and chemistry in the laboratory of Wiegleb at Langensalza, and commenced the practice of his profession in Berlin. In 1787 he published a description of the plants in and around Berlin, followed a few years after by two elementary works on botany. In 1798 he was appointed professor of natural history in the university of Berlin, and soon after superintendent of the botanic garden. His principal work is a new edition of the *Species Plantarum* of Linnæus, comprising in addition all species of plants discovered since the original publication, arranged according to the Linnæan system. He published 4 volumes and a part of a 5th, and this and the 6th were completed by Schwagricher and Link after his death.

WILLEMS, Jan Frans, a Flemish philologist, historian, and poet, born at Bouchout, near Antwerp, March 11, 1793, died in Ghent, June 24, 1846. At the age of 12 he went to Lierre for the purpose of learning music, and there found a patron named Bergmann, who induced his parents to place him as clerk to a notary in Antwerp, where in 1811 he gained a prize for a poem in honor of the battle of Friedland and peace of Tilsit. In 1814 Holland was united with Belgium, and in 1818 Willems, who now came forward as the originator of the so called "Flemish movement" in literature, published a poem to the Belgians entitled *Aen de Belgen*, in which he exhorted them to maintain their Flemish nationality while submitting to the Dutch rule. The poem met with no favor among portions of his countrymen, who thought him to be a willing instrument of the despotism of Holland; but the government rewarded him with an office in Antwerp, where he was afterward appointed keeper of the archives. The poem was followed by a literary history of Flanders and Brabant from the 13th to the 19th century, entitled *Verhandeling over de Nederduytsche Tael- en Letterkunde, opzigtelyk de zugdelyke Provintien der Nederlanden* (2 vols. 8vo., 1819–'24). The zeal with which he had combated the opponents of the union with Holland led, after the revolution of 1830, to his displacement from his former offices. He was given a situation with a small salary in the small town of Eecloo, and here he continued his literary labors, transcribed unedited fragments of the old national literature, and made a Flemish translation of the tale of "Reynard the Fox," which he claimed to be of Flemish origin. In 1835 he was placed in a higher office at Ghent. A society for the encouragement of the Flemish language and literature was formed at Ghent, which published a journal called the *Belgisch Museum*, under his editorship. The works of Willems are 43 in number—34 in Flemish, 5 in French, and 4 in both languages. The most important are: "Miscellanies on National Subjects" (1827-'30); the "Rhymed Chronicle of Jan van Heelu;" "Rhymed Chronicle of Brabant, by Jan van de Klerk;" and the "Chronicle of Edward III., King of England, written in Rhyme in 1347 by Jan de Klerk" (Ghent, 1840).

WILLET, an American wading bird of the tattler family and genus *symphemia* (Raf.). The bill is very thick, compressed, longer than the head, with the upper mandible grooved to about the middle; wings long, and legs long and strong; tail short and nearly even; and both inner and outer toes webbed. The *S. semipalmata* (Hartlaub) is about 15 inches long and 31 in alar extent, the bill 2½; it is dark ashy above, without spots, the shafts of the feathers brownish black; rump, upper tail coverts, and under parts white, the last tinged with ashy on the neck and sides; tail ashy white, all but the 2 middle feathers with dark ashy brown spots; secondaries white, with brownish black spots; the young are spotted and transversely banded with brownish black. It is found throughout temperate North America, and in South America, rarely going north or east of Massachusetts or far from the sea shore; it is the largest of the tattlers in the United States, and is called semipalmated snipe and stone curlew in some districts; it goes south in winter as far as the gulf states, and is often found in company with the godwits (*limosa*). It breeds from April to the middle of May, according to latitude, in the salt marshes on the ground, making a nest of grass 3 to 5 inches high; the eggs are 4, 2¼ by 1½ inches, dull yellowish olive with dark brown blotches; both sexes incubate, and the young run about as soon as hatched; the eggs, and the flesh, especially of the young birds, are excellent eating. The food consists of small crustaceans, and aquatic worms and insects. They are rather shy, rapid and strong fliers, and good swimmers if necessary, though they cannot dive; they are noisy while breeding, and are usually seen in flocks; they can alight well on trees. The name is derived from the resemblance of their notes to the syllables "will-willet."

WILLIAM I., surnamed the CONQUEROR, the first Anglo-Norman king of England, born in 1027, died in Rouen, Sept. 9, 1087. He was the son of Robert I. or II., duke of Normandy, called "Robert the Devil," and of a young woman of Falaise, named Arletta, a corruption of the Danish name Herleve, who became the duke's mistress. She was the daughter of a tanner. When Robert resolved to make a pilgrimage to Jerusalem, he caused the Norman barons to receive William as their duke, making him his heir at the age of 7 years. Robert died the next year, and the youth of William was passed amid dissensions and wars, in the course of which he encountered great personal dangers. Henry I., king of France, at whose court he had spent his earlier childhood, was sometimes his friend and sometimes his enemy. In 1047 the combined French and Norman forces defeated the Burgundian count Guy and his allies from Cotentin and Bessin, at the battle of Val des Dunes. William aided the French king in his contest with the count of Anjou, and took from Maine the strong town of Domfront, which was retained by Normandy. In 1051 he visited England, then ruled by Edward the Confessor, whose court and offices were filled by Norman favorites. He married Matilda, a daughter of the count of Flanders, in 1053. For several years William carried on contests with France, Anjou, and Brittany, greatly to the increase of his dominions and his reputation. Maine, partly by conquest and partly by inheritance, became subject to him. He claimed the throne of England through Emma, sister of his grandfather; but this claim, in itself worthless, could not be urged by one of illegitimate origin, even if it had been good in the person of a duke of Normandy born in wedlock. When Harold, son of Earl Godwin, visited the Norman court in 1065, he was compelled to swear fealty to William, and to promise to do all that should be in his power to support William's unfounded claim to succeed Edward the Confessor, who had himself, it is asserted, recognized his right, to the exclusion of the feeble Edgar Atheling, the true heir; but on Edward's death Harold procured his own elevation to the throne. William sent to Harold demanding the fulfilment of his oath, and in reply Harold banished all the Normans who had established themselves in England under his predecessor. William then began preparations to enforce his pretensions by arms. He encountered considerable opposition from his barons, but finally overcame it. Supported by the pope, he was enabled to proclaim a holy war against Harold, and to call upon the military adventurers that were then so common to join his standard. The valiant vagabonds of western Europe entered his service by thousands. A large fleet was assembled, which sailed from St. Valéry-sur-Somme, Sept. 27, 1066. William landed 60,000 men near Hastings the next day, strongly intrenched his forces, and sent out detachments to ravage the country. He there awaited the arrival of Harold, who had been engaged in the north, fighting his brother Tostig and the Norwegians. Harold arrived Oct. 13, and the next day was fought the battle of Senlac, or Hastings, in which, after a long and obstinate contest, the Saxons were defeated, and their king was slain. But little further resistance was made to the victor, who advanced to London, where he was crowned Dec. 25. An irregular election of William to the throne took place on that day by the English and Norman nobles who were present. At first the king affected much regard for the rights of his new subjects, and his rule was mild and just; but at the same time he was careful to retain all power in the hands of the Normans. Visiting Normandy in 1067, troubles broke out in England during his absence, which he suppressed on his return; and then he resolved upon a change of policy. A league was formed against him by the Saxon nobles, who received promises of foreign aid. Hastening to the north, William triumphed over all his enemies, Saxons, Scots, and Danes. He laid waste the whole country between the Tees and the Humber, and caused the death of 100,000 people. It is from this time, 1070, that the deep animosity between the Saxons and Normans must be dated. The former were to be treated as a conquered people. The religious houses were plundered of all their contents, and the principal Anglo-Saxon clergy were deposed or banished, and their places filled by foreigners. Stigand, archbishop of Canterbury, was deposed by the council of Winchester, and was succeeded by Lanfranc. The opposition made by Earls Morcar and Edwin, and by Hereward, was quelled; and an invasion of Scotland in 1072 led to the submission of that country. Success also crowned William's exertions in Maine, which was settled upon his son Robert by the count of Anjou. A conspiracy formed against him by some of the principal Normans in England was discovered, and the parties to it punished, after the king's forces had been successful in the field. The Danes came to the assistance of the rebels, but were bribed not to land. Invading Brittany, William was compelled by an allied French and Breton force to raise the siege of Dol; whereupon he made peace, and gave his daughter Constance in marriage to the count of Brittany. The dissensions between the king and his son Robert, whom he had declared to be his heir in Normandy, began in 1074, the prince having demanded both Normandy and Maine of his father, without avail. War followed, and Robert was supported by many of the young nobility, and by the king of France, who saw the error that had been perpetrated in allowing William to become possessed of England. William was victorious, but was induced to give up Normandy to his son, who was employed in an expedition to Scotland. The war between the father and the son was soon after renewed. "A more instructive example can hardly be given for the purpose of showing the condition of European states," says Lappenberg, "than the reign of William the Conqueror. A foreign nation by which he was held in abhorrence; his nobles in rebellion against him; his eldest son for years at the head of a party striving to deprive him of his continental possessions; hardly a powerful neighbor who was not ready at every moment to take up arms against him; one war and insurrection after another—such were the adverse circumstances of his reign in England; and yet they were all so unconnected, and so void of a common object, that the king had no cause for apprehension lest he should sink under such general hate and enmity." William led an expedition to Wales in 1081. Most of the latter part of his reign he passed in Normandy, leaving England to be governed by his half brother Odo, bishop of Bayeux, who aspired to the papacy; but when Odo sought to depart for Rome, the king returned to England, seized him, and imprisoned him at Rouen, at the same time confiscating the vast treasures which he had extorted from the English. The pope's interference to procure Odo's liberation was ineffectual. William allowed the Peter pence to be collected in England, but when required to take the oath of homage to the pope and his successors, he positively refused compliance; and on other occasions he evinced a spirit of independence of Rome, though a strict believer in the doctrines of the church, and observant of the customary rights of the papal court. He made extensive preparations to meet a powerful Danish force that was formed for the invasion of England in 1085, but which never sailed. The "Domesday Book" was completed in 1086. (See DOMESDAY BOOK.) In the latter part of his reign William was involved in trouble with some of the nobility of Maine, with whom he made peace on their own terms. His last dispute was with the king of France. Some of the vassals of the latter entered Norman territory, and plundered it, whereupon William demanded the restoration of the Vexin, which had been reunited to the crown of France after the death of Count Drogo of Mantes. Invading the Vexin, he took Mantes, and committed it to the flames. While riding over the ruins, his horse trod on some of the burning materials, and plunging cast its rider on the pommel, causing a dangerous rupture. The king was conveyed to Rouen, and in one of the monasteries of the suburbs of that town he lingered for several weeks. During this time he sought to do justice to many whom he had wronged, ordering that several distinguished personages should be set at liberty, giving large sums of money for the rebuilding of the churches of Mantes, and in his testament directing the distribution of treasures to cloisters, churches, ecclesiastics, and the poor. His remains were buried at Caen, in the church of St. Stephen. The origin of the surname of the Conqueror, which is indelibly coupled with the name of the first Norman sovereign of England, so that he is rarely mentioned as William I., is thus explained by Blackstone: "What we call purchase, *perquisitio*, the feudists called conquest, *conquisitio;* both denoting any means of acquiring an estate out of the common course of inheritance. And this is still the proper phrase in the law of Scotland, as it was among the Norman jurists, who styled the first purchaser (that is, him who brought the estate into the family which at present owns it) the conqueror, or *conquereur*, which seems to be all that was meant by the appellation which was given to William the Norman." The king was mostly known in his lifetime as William the Bastard, an appellation of which he was not ashamed, though he repeatedly punished allusions to his origin, meant as insults, with fierce severity.

WILLIAM II., second king of England of the Anglo-Norman line, commonly known as William Rufus, from his red hair and sanguine complexion, 3d son of the preceding and of Matilda of Flanders, born in Normandy in 1060, slain in the New Forest, Aug. 2, 1100. He first visited England in 1068, on the occasion of his mother's coronation. He received a good education both in arms and in letters, Lanfranc being one of his instructors. He left the dying bed of his father, Sept. 9, 1087, and hastened to England, of which he became monarch without trouble, owing to the dilatoriness of his elder brother Robert; and he was crowned in Westminster abbey, Sept. 27. The earlier acts of his reign were good, and he was popular with his English subjects; but this popularity ceased when he violated his pledges to his people to restore the laws of Edward the Confessor, after they had assisted him against his elder brother. After the death of Lanfranc in 1089, he ceased to place much restraint on his passions, and for the most part governed lawlessly. He oppressed the church as well as the people, and lavished most of the money he obtained in riotous living, and on public works, completing the tower of London and Westminster hall, and building London bridge. He invaded Normandy in Jan. 1091, to retaliate on Duke Robert for his attempt on England, and was joined by many of the nobles; but the king of France mediated a peace between the brothers, on terms advantageous to William and humiliating to Robert, and then they turned their united arms with success against their brother Henry. (See HENRY I.) Returning to England, accompanied by Robert, William defeated the Welsh and Scotch invaders of his kingdom; but pressing his advantages against the Scotch, he invaded their country, and fell into difficulties, from which he was extricated by the mediation of Edgar Atheling. He became involved in a quarrel with the monks of Canterbury, but falling ill was terrified into making a surrender to the clergy, through the exertions of Anselm, abbot of Bec, whom he made archbishop of Canterbury. The royal repentance lasted no longer than the royal illness, and, were the conclusion possible concerning any man of that age, we might infer from the king's language that he was never a believer except when on a sick bed. The king of Scotland, having renewed the war, invaded England, and was defeated, he and his eldest son being slain in the battle. William Rufus, however, protected the family of Malcolm, and assisted in restoring his eldest surviving son to the Scotch throne. Robert, duke of Normandy, declared war against him, and William invaded his duchy, but met with no success. He quarrelled with Anselm, and sought to have him deprived of his office; but the archbishop was protected by Urban II., the orthodox pontiff. He triumphed over a rebellion of the northern barons, headed by Mowbray, earl of Northumberland. He obtained possession of Normandy in 1096, by advancing to Robert the sum of 10,000 marks, for which that chivalrous prince pledged the duchy, he requiring the money to enable him to join the first crusade. William claimed Maine as a portion of his new dominions, but deferred the use of the sword in that quarter until he had made war on France to obtain the restoration of the Vexin. This war was waged with various fortune. Returning to England in 1097, the king again had a violent quarrel with Anselm, whom, on his departure for Rome, he robbed of the income of his see of Canterbury; and he sold bishoprics to the vilest of men, greatly to the disgust of his subjects. He returned to the continent in 1099, to take part in the war in Maine, where he relieved the fortress of Le Mans, but was foiled at the siege of Mayet. On returning to England in the spring of the same year, he kept court for the first time in Westminster hall, which he had built for the meeting of the great council of the nobles. He went to Maine in the summer, and carried on a successful campaign against the rebels there. In the spring of 1100 he entered into negotiations with the count of Poitiers, who, having taken the cross and raised a great army, could not move for the want of money, which he endeavored to obtain from William by pledging all his dominions to him. The king eagerly embraced the offer, and the completion of the bargain would have given him possession of a great part of France, and of all those rich dominions which were 55 years later annexed to the dependencies of England by the marriage of Henry II. with Eleanor of Aquitaine. It was thought in France that he was seeking the crown of that country, which he might have done with success had he lived to perfect the proposed arrangement with the count of Poitiers; but while he was fitting out a great fleet for the purpose of taking possession of the new countries that invited his rule, he visited Winchester for indulgence in those field sports of which he was, like all the members of his family, passionately fond. While hunting in the New Forest he was accidentally shot by Walter Tirel, lord of Poix and seneschal of Pontoise, dying instantly. Such is the received account, which however does not well bear criticism; and it is more probable that he was assassinated. His character it is not easy to draw, for it is certain that he had offended the whole clerical body (at the time of his death he had in his possession, beside the temporalities of Anselm, 3 bishoprics and 12 vacant abbeys), and they furnished the only writers of that age. In the papal conflict the king had not sided with the anti-pope, but neither had he supported the pope, and hence had laid neither of the church parties under obligations to him. During his reign the Anglo-Norman power was somewhat extended at the expense of the Welsh; and the last collision with the Northmen then occurred, in 1098, when Magnus III., king of Norway, appeared off the island of Anglesea, and slew Hugh, earl of Montgomery, a ferocious Norman chief, who had recovered that place from the Welsh. William II. left no legitimate issue, being the only "bachelor king" of England who reached manhood, and was succeeded by his younger brother as Henry I.

WILLIAM III., king of England and stadtholder of Holland (William Henry of Nassau, prince of Orange), born at the Hague, Nov. 4, 1650, died at Kensington, March 8, 1702. He was the son of William II., prince of Orange, by the princess Mary of England, eldest daughter of Charles I. He was born 8 days after the death of his father, and at a time when the fortunes of his family were at a very low state. His mother's family had been deprived of the British throne, and her father had been executed; and but two months before William's birth, his uncle, Charles II., had been defeated by Cromwell at the battle of Dunbar, which defeat was followed, on the anniversary of that of Dunbar, by the yet more fatal battle of Worcester. The death of William II. at the age of 24 had put a stop to his projects for the establishment of a despotism over Holland, and thrown power into the hands of the aristocratical or Louvestein party. The house of Orange had long sought to obtain supreme power in that country which its greatest member had freed from the Spanish yoke, and never were its designs nearer to success than in 1650, when the death of the stadtholder changed every thing. There was no male member of that house left of sufficient popularity and influence to take up the projects of William II., or to be elevated to the post of stadtholder to the prejudice of the new-born prince. The states-general called a general assembly at the Hague, and it was determined that the choice of magistrates and officers should thereafter lie with the cities, and that all soldiers, including the guards of the late stadtholder, should swear fidelity to the states of Holland. This was done in face of all the opposition that could be made to the change by the infant prince's relatives. When peace was made between the Dutch and the English, April 5, 1654, "the states of Holland and West Friesland were compelled to make a decree, whereby they declared that they would never elect the prince of Orange, or any of his family, to be stadtholder, admiral, or captain-general of the forces of the United Provinces." The other provinces did not approve of this, but were obliged to submit. For many years the Orange party was much depressed, and the republic was governed by John De Witt, grand pensionary of Holland. The prince received occasional evidences of public favor, but himself and his party were powerless in the state. In 1667 a perpetual edict was made against the office of stadtholder and captain-general being vested in the same person. William was elected "first noble" by the states of Zealand, which gave him the right to enter the states-general as one of the deputies of that province, and as the representative of its nobility. He visited England at the close of 1670, remaining there 3 months. The attack made on Holland by France and England in 1672, brought about a complete change of parties and of political policy in that country. The prince of Orange was immediately and unanimously appointed captain and admiral-general of the United Provinces, Feb. 24. A long and severe contest ensued. At first the allies were everywhere successful, but the ability of William so far restored the condition of the Dutch that the kings of France and England offered to make him the despotic ruler of his country. He however remained faithful to that country, and by his skill in the field, and his yet greater skill as a diplomatist, was enabled to baffle the allies, and to obtain assistance from other countries. England abandoned the French alliance, and finally became the ally of Holland. In the course of this war the prince of Orange fought a drawn battle with the prince of Condé, at Senef, Aug. 11, 1674. He was defeated at the battle of Cassel in 1677; and on Aug. 14, 1678, he attacked the French at the abbey of St. Denis, near Mons, fighting a bloody but indecisive action. The war had been closed 4 days earlier by the peace of Nimeguen, and William is accused of having attacked the French after he had become possessed of knowledge of that fact. In Oct. 1677, William visited England, and on Nov. 4 married Mary, eldest daughter of James, duke of York, heir presumptive to the British crown. This alliance was very popular both in Holland and in the British dominions, but it was some years before it was productive of much happiness to the parties to it. The prince of Orange was regarded as the natural head of the Protestant party, and it was supposed that his wife would succeed regularly to the English throne. His chief object was to lessen the power of France, which under Louis XIV. had become dangerous to Europe, and which was directed against Protestantism, even at the time when the king was quarrelling with the pope. Louis seized the principality of Orange, which is in France, and William resented the seizure as a personal insult. When Monmouth invaded England, after the accession of James II. to the throne, the prince sent 6 British regiments in the Dutch service to James's aid, and offered to take command of his whole army. But a change soon came over their feelings, and William was looked upon as the champion of the English constitution in church and state against the designs of the king to restore the Roman Catholic religion, and to establish arbitrary power. He accepted the position assigned him by English opinion, and was supported by his wife, between whom and himself the best understanding now existed. The principal object of the prince was to detach England from her connection with and dependence upon France, which resulted from the domestic policy favored by James II. Holland became the place of refuge for all the discontented English. Dissatisfaction with the king's measures having become general, William was invited to enter England with an army, June 30, 1688, the invitation being signed by the earls of Shrewsbury, Devonshire, and Danby, by Lord Lumley, Edward Russell, and Henry Sidney, and by Henry Compton, bishop of London. William accepted the invitation, and was aided by the states of Holland. He assembled a large fleet and an army 15,000 strong, and on Oct. 19 sailed from Helvoetsluys, but his fleet was compelled to put back by a storm. On Nov. 1 he again sailed, and landed at Torbay on the 5th. For a few days he had no encouragement from the English, and began to talk of returning to his fleet; but his supporters had expected him to land elsewhere, and were not prepared to act in the west. On the 12th Englishmen of note commenced joining him, and soon the whole country was at his feet. James was deserted by the church, the nobility, the army, and the people, and fled to France, where he and his family became pensioners of Louis XIV. William took the government upon himself, and summoned a convention of the estates of the realm. In Scotland his cause was as triumphant as in England. The convention parliament met on Jan. 22, 1689. More than a fortnight was passed in settling the government. William wished to be called to the throne alone, and without regard to the claims of his wife, while some politicians would have conferred the throne solely upon Mary, and others would have had him appointed regent. He peremptorily announced that he would take nothing short of the kingly office. On Feb. 7 it was determined that William and Mary should be called to the throne as king and queen of England; and on the 13th they accepted the offer made to them by the convention parliament, and were proclaimed. The submissiveness of Mary prevented this arrangement from yielding the fruit expected of it, she bearing herself throughout life less as a sovereign than as a subject. The post to which William had succeeded was not an agreeable one, as party spirit soon raged throughout England and Scotland, and almost the whole of Ireland was in a state of revolt. William and Mary were proclaimed king and queen of Scotland, the Scottish estates following the example of England. The early part of William's British rule was unfortunate. Civil war broke out in Scotland, and for some time it was waged by the highlanders in the interest of James, with success. James repaired to Ireland, where he was enthusiastically received by the Catholic population; and with the exception of a few places, the chief of which was Londonderry, the whole of Ireland was in his possession. England declared war with France, May 7, 1689, and became a party to the coalition which William had formed against Louis XIV., and which comprehended the German empire, Spain, Holland, the house of Brandenburg, and subsequently Savoy. Most of the events of the Irish war in 1689 were unfavorable to England until the summer had become advanced, when the siege of Londonderry was raised, and the Irish were beaten at Newton Butler. The year closed there favorably to James. In 1690 William took the command of a fine army in Ireland, and at the battle of the Boyne, July 1, defeated James, who fled to Dublin, and thence to France. William besieged Limerick, but was forced to raise the siege, in consequence of the gallantry of the Irish and the approach of wet weather. During his absence from England the British fleet had experienced a reverse at Beachy Head, and a few French had been landed in England, where they perpetrated great ravages; but the effect had been to raise men of all parties against them, the extremest Jacobites alone excepted. At the same time the forces of the coalition had been beaten at Fleurus. Quiet had been restored in Scotland, where the death of Dundee had deprived the highlanders of the only leader capable of commanding them, and where they had met with severe reverses. The measures that were resorted to for the maintenance of peace in Scotland, under the direction of the master of Stair, Sir John Dalrymple, led to the massacre of the Macdonalds of Glencoe in 1692, a transaction that has left a dark stain on William's reputation. The king returned to England after his repulse at Limerick; but Marlborough led an expedition from England to Cork and Kinsale, which places he took. The Irish war was vigorously resumed in 1691, the English forces being commanded by Ginkell, who completed the conquest of the Catholics. In 1691 William proceeded to the continent, but no decisive event took place in Flanders. Louis XIV. made a vigorous attempt to effect the restoration of James II. in 1692. A powerful fleet and a large army were assembled, but the fleet was destroyed at the battle of La Hogue, and so the attempt failed. The war was continued down to the close of 1697, with but little glory to the allies, who lost Namur in 1692, and were defeated at Steenkirk the same year, and the next year at Landen, William commanding in both actions. Queen Mary dying, Dec. 28, 1694, William remained sole sovereign. He retook Namur in 1695. Both parties were exhausted by the war, in which neither had gained much, and the treaty of Ryswick was made in Sept. 1697. During the whole war William had been disturbed by the formation of Jacobite plots, some of which had been directed against his life, but all of which failed, many persons being executed for taking part in them. The bank of England had been created, the modern system of finance introduced, and ministerial responsibility recognized. William had struggled long in opposition to party rule, and he had caused the act of grace to be passed, by which an end was put to those bloody political proscriptions that had for ages been the curse and the disgrace of England. The liberty of the press was established, the coinage purified, a standing army constitutionally formed, and the independence of the judiciary secured. The English constitution was placed on a firm basis, and has remained unshaken for 5 generations. The statesmen of that time were among the most corrupt of mankind, and many of them corresponded with James while they were in the service of William. The remainder of William's reign was passed in disputes with parliament, or in negotiations with France. The first partition treaty, formed in 1698, providing for the settlement of the succession to the throne of the Spanish empire on the extinction of the elder branch of the house of Austria, came to nothing, in consequence of the death of the electoral prince of Bavaria; and the terms of the second were violated by Louis XIV. accepting the Spanish throne for his grandson, the duke of Anjou. This, however, would not have led to a renewal of the war between France and England, had not the French king, on the death of James II., acknowledged his son king of Great Britain and Ireland. This enraged the English, and William was making extensive preparations for war when he was thrown from his horse while hunting, Feb. 21, 1702, and received injuries from the effects of which he died. The act of settlement, calling the house of Hanover to the throne of England, an object which William had much at heart, was passed in 1701, and completed the English revolution. He was succeeded by Queen Anne.—William, says Hume, was "silent and thoughtful, given to hear and to inquire; of a sound and steady understanding; firm in what he once resolved or once denied; strongly intent on business, little on pleasure." He was blunt and even rude in his manners; little interested in letters or science; decided in his theological opinions, but not irreproachable in his domestic life; wary, courageous, hiding a naturally passionate temper under a phlegmatic exterior; a stern but affectionate husband. He had a slender and feeble frame, a lofty and ample forehead, a nose curved like the beak of an eagle, a keen, bright eye, a thoughtful and somewhat sullen brow, and a firm and somewhat peevish mouth.

WILLIAM IV., king of Great Britain and Ireland, 5th sovereign of the Hanoverian line, born at St. James's palace, Aug. 21, 1765, died at Windsor castle, June 20, 1837. He was the 3d son of George III. and Queen Charlotte, and received the name of William Henry from his uncle the duke of Gloucester, who was one of his sponsors. He received the usual course of education that was adopted for the king's sons; but having early expressed a predilection for the naval profession, he was appointed a midshipman, and began service, June 15, 1779, on board the Prince George, 98, of Admiral Hardy's fleet. This fleet was in presence of the combined French and Spanish fleets in the channel, but no battle took place. The Prince George was subsequently attached to the fleet of Admiral Rodney, and took part in two victories won by him over the Spaniards. The prince was sent to England as bearer of flags taken from the enemy. He served again in the channel fleet, and in the fleet that was sent to the relief of Gibraltar; and in 1782 he arrived at New York in the Prince George. A plan formed for his capture by Col. Ogden, of the 1st New Jersey regiment, and approved by Washington, was not successful. The prince was afterward transferred to the Warwick, 50, and saw much and severe service in her on the American coast. Subsequently he served in the West Indies, and made a tour of the West India islands. He returned to England June 25, 1783, passed the next two years on the continent, and in June, 1785, was made a lieutenant. Having served in the Hebe frigate in a cruise around the British islands, he was removed to the Pegasus, and on April 10, 1786, was made post-captain, having that ship for his command. In her he sailed for Halifax, but soon went to the West Indies, where he served under Nelson. Going north without orders, and returning to England, he was condemned to remain within the limits of Plymouth garrison for as many months as he had been absent from his station, and then to be sent abroad again to the Halifax station and the West Indies. This sentence was enforced, and the prince sailed in the Andromeda frigate for Halifax, cruised on the Halifax station and in the West Indies, and returned to England in April, 1789. In May he was made duke of Clarence and of St. Andrew's in the kingdom of Great Britain, and earl of Munster in the kingdom of Ireland, and took his seat in the house of lords, June 8. The means for maintaining his position as a peer were amply provided by his father and by parliament. When the Nootka sound dispute threatened war with Spain, the duke was appointed to the command of the Valiant, 74; but peace was maintained, and he was made rear admiral of the blue. In the house of peers he opposed the abolition of the slave trade. He seldom spoke, save on subjects connected with the navy, in which he always took a strong interest; but in 1800 he spoke with much vehemence and ability in opposition to a bill to prevent any person divorced for adultery from intermarrying with the other guilty party. During the war with republican France he was not professionally employed. He supported the peace of Amiens, and also the renewal of the war with France in 1803. In 1811 he protested against the regency bill.

At the close of 1813 he commanded the Jason on the Dutch coast, and served against the French, supporting Sir Thomas Graham, the British commander, and received a slight wound from the explosion of a shell. He had his flag on board the Jason frigate, in which he returned to England, March 29, 1814. In the same vessel he attended Louis XVIII. on his return to France. From 1791 to 1811 the duke of Clarence had as mistress the celebrated actress Mrs. Jordan, who bore him 5 sons and 5 daughters. On July 13, 1818, he married the princess Adelaide of Saxe-Meiningen. On the trial of Queen Caroline he supported his brother, George IV., and was mercilessly handled by the counsel for the queen. He visited the continent with his wife in 1822. On the death of Earl St. Vincent in 1823, he became general of the marines, having become an admiral by seniority several years earlier. He visited the continent in 1825, and again in 1826. The death of the duke of York, in 1827, made the duke of Clarence heir presumptive to the crown; and when the Canning ministry was formed, April 24, the duke was made lord high admiral, being the first person who had held that office since 1710, its duties having been discharged by commission. He was not allowed a seat in the cabinet. While he held office occurred the battle of Navarino, and to the policy which led to that action the lord high admiral was reported to have given his assent in very emphatic terms. He held the office to which he had been appointed by Mr. Canning for some months after the formation of the Wellington ministry, resigning it in Sept. 1828. The next year he was foremost among the supporters of Catholic emancipation. On June 26, 1830, on the death of George IV. without heirs, the duke of Clarence became king of Great Britain and Ireland, with the style and title of William IV. The French revolution of 1830 occurred a month after he had ascended the throne, and led to political changes in other countries. In England the tories were overthrown, and the whigs, under Lord Grey, came into power, pledged to parliamentary reform. After a severe struggle, the reform bill was carried. The slaves in the British West India colonies were emancipated. The Grey ministry came to an end in 1834, when Lord Melbourne, of the same political faith, became premier; but his ministry was dismissed by the king the same year, William having become alarmed at the political tempest which the reform question had created, and being personally influenced by the tories, who had assumed the name of conservatives, and in whose favor a strong reaction had taken place. A new ministry was formed, headed by Sir Robert Peel, but after an existence of less than 5 months it was driven from power, and the Melbourne ministry was reinstated, after some changes had been made in the distribution of offices. Some reforms were made in the Irish church, the English municipal reform bill was passed, and the dissenters were freed from the effects of some old and oppressive statutes. The king was about to change his ministers again, when he was seized with his last illness, in May, 1837. His death without a male heir caused the crown of Hanover to be separated from that of Great Britain, his brother, the duke of Cumberland, becoming king of Hanover, and his niece Victoria queen of Great Britain.—Of his 5 sons by Mrs. Jordan, the eldest, George Fitz Clarence, born Jan. 29, 1794, committed suicide March 20, 1842. He was on June 4, 1831, created earl of Munster, Viscount Fitz Clarence, and Baron Tewkesbury; he was a major-general in the British army. The second, Frederic Fitz Clarence, born Dec. 9, 1799, died Oct. 30, 1854, at Bombay, where he was lieutenant-general commanding. The third, Adolphus, born Feb. 1802, died May 17, 1856, was a rear admiral. The fourth, Augustus, born in 1805, died June 14, 1854, was rector of Maple Durham, Oxfordshire, and chaplain to Queen Victoria. The 5 daughters all married among the aristocracy; two of them, Lady Mary Fox and the countess of Erroll, are still living.

WILLIAM I. (Frederik Wilhelm), king of the Netherlands, born at the Hague, Aug. 24, 1772, died in Berlin, Dec. 12, 1843. His father was William V., hereditary stadtholder of the Netherlands (died in Brunswick, April 9, 1806). His education was directed by his mother, the princess Frederica Sophia Wilhelmina of Prussia, niece of Frederic the Great. In 1791, being then prince of Orange, he married his cousin the princess Frederica Louisa Wilhelmina of Prussia (died in 1837), and in the wars of the French revolution commanded the Netherland army with varying success, until Pichegru entered Holland, when the stadtholder abdicated (Jan. 17, 1795), and the prince, after attending his father to Hampton Court near London, went to Germany. In 1802 he established his court in Fulda as ruler of the territories presented to his father by way of indemnity for the loss of the Netherlands; but, these he lost in 1806, for refusing to join the Rhenish confederation. He took part in the battle of Jena as a Prussian general, served as a volunteer in the battle of Wagram in 1809, and after the battle of Leipsic landed at Scheveningen, Nov. 29, 1814; and on March 16, 1815, the congress of Vienna having annexed Belgium to his dominions, he was proclaimed at the Hague as William I., king of the Netherlands and duke of Luxemburg. He resided alternately at the Hague and Brussels until the successful outbreak of the Belgian revolution in 1830, which event he obstinately refused to recognize, but was finally obliged on April 10, 1839, to subscribe to the convention of the great powers establishing the independence of Belgium. The heavy debt which now weighed upon Holland caused popular discontent, which was heightened by the king's attachment to the countess Henriette d'Oultremont, a Belgian lady and a Roman Catholic; and on

Oct. 7, 1840, he abdicated in behalf of his oldest son William II., and went to Berlin, where he married the countess and spent the rest of his life as count of Nassau. He left a private fortune estimated at over $40,000,000.

WILLIAM II. (WILHELM GEORG LODEWIJK), king of the Netherlands, son of the preceding, born Dec. 6, 1792, died at the Hague, March 17, 1849. He was educated at the Berlin military academy and the university of Oxford, became an aide-de-camp to Wellington in 1811, distinguished himself at Ciudad Rodrigo, Badajoz, and Salamanca, and when his father became king was made commander of the army of the Netherlands. He took a prominent part in the conflict at Quatre Bras (June 16, 1815) and in the battle of Waterloo, where he was wounded in the shoulder. He was a candidate for the hand of the English princess Charlotte, but after the failure of that project married in St. Petersburg, Feb. 21, 1816, the grand duchess Anna Pavlovna, sister of Alexander I. On the outbreak of the Belgian revolution in 1830 he went to Antwerp as a plenipotentiary, to endeavor to arrange a peaceful settlement, and was finally induced (Oct. 16) to exceed his authority and recognize the independence of Belgium. This act the king repudiated and recalled the prince, who now made a visit to England. In 1831 he returned to take command of the army against Belgium, but was compelled to withdraw before the superior forces of the French. He succeeded his father Oct. 7, 1840, and after a prolonged contest with his people was constrained to admit the radical reforms in the constitution and the new system of taxation which they desired; but he died before these measures were consummated.

WILLIAM III. (WILHELM ALEXANDER PAUL FREDERIK LODEWIJK), king of the Netherlands, eldest son of the preceding, born at the Hague, Feb. 19, 1817, was educated in England, and mounted the throne March 17, 1849. His reign has been characterized by important reforms and a faithful observance of the principles of constitutional government. The expenses of the administration have been reduced, so that in 1861 the revenue exceeded the charges upon the treasury; the king himself set the example of economy, having reduced his civil list from 1,200,000 to 800,000 florins.—He married in 1839 the princess Sophia of Würtemberg, by whom he has two sons, William, prince of Orange, born Sept. 4, 1840, and Prince Alexander, born Aug. 25, 1851.

WILLIAM I. (WILHELM FRIEDRICH LUDWIG), king of Prussia, born March 22, 1797, is the second son of Frederic William III. He early entered the military service, and took part in the campaigns of 1813 and 1814. In 1840 he became grand master of the masonic order in Prussia, and on the accession to the throne of his brother Frederic William IV. (June 7) he was appointed governor of Pomerania, and in 1847 was a member of the first general diet of the kingdom. Being popularly believed to favor absolutist tendencies, it became advisable for him to withdraw to England on occasion of the democratic outbreak in Berlin in March, 1848, but he returned in June following, and accepted the office of a deputy in the Prussian national assembly, but took no part in the proceedings of that body. In 1849 he commanded the forces sent to put down the insurrection in Baden, and succeeded in his task after a campaign of a few weeks. During the Crimean war he was generally believed to be opposed to the passive policy of the Prussian government, and in favor of actively taking sides with the allies against Russia. On Oct. 23, 1857, the ill health of Frederic William IV. rendered it necessary to commit the direction of the government to the prince for the period of three months, a commission which was thrice renewed, till on Oct. 9, 1858, he was formally declared regent. He became king Jan. 2, 1861, and was crowned at Königsberg Oct. 18 following. On July 14, 1861, a Leipsic student, named Becker, fired a pistol at him at Baden-Baden, the bullet tearing his coat and slightly grazing his shoulder; Becker was arrested and punished.—William I. married, June 11, 1829, the duchess Marie Luise Auguste Katharine of Saxe-Weimar, by whom he has two children; the elder, the crown prince Friedrich Wilhelm Nicholas Karl, born Oct. 18, 1831, was married Jan. 25, 1858, to Victoria, princess royal of Great Britain; and the younger, the princess Luise Marie Elisabeth, born Dec. 3, 1838, married, Sept. 20, 1856, the grand duke Frederic of Baden.

WILLIAM I. (WILHELM FRIEDRICH KARL), king of Würtemberg, born Sept. 27, 1781, at Lüben in Silesia, where his father, Duke Frederic, then commanded the Prussian garrison. After having shared the wanderings of his family in Switzerland, Prussia, and other parts of Germany, losing in 1787 his mother, a princess of Brunswick, he was brought to Würtemberg in 1790. His education was directed by his father, who ruled his household with despotic severity, whence a lasting misunderstanding arose between the two. In 1797 the father became reigning duke, and in 1800 the son served as a volunteer under the Austrian archduke John, and distinguished himself in the battle of Hohenlinden. In 1803, when his father assumed the title of elector, the prince set out on a journey in France and Italy, chiefly for the purpose of keeping away from the court, but returned in 1806 after his father had become king, and lived for several years in great seclusion at Stuttgart. In 1808 he married the princess Caroline Augusta of Bavaria, from whom he was divorced in 1814, after which she became the 4th wife of Francis I. of Austria. His father's government being very unpopular, the prince was naturally the centre of all the liberal hopes in the nation. In 1812 he accompanied Napoleon in his invasion of Russia, as commander of the Würtemberg contingent, but falling sick at Wilna had no part in the subsequent events of the campaign. After the battle of Leipsic, Würtemberg joined the coalition against Napoleon, and the prince took command of the 7th army corps of the allied army, and gained distinction at Épinay, Brienne, and Sens, and at Montereau held in check for a day a superior French force commanded by Napoleon in person. In 1815 he drove a French corps under Rapp behind the walls of Strasbourg. In 1816 he married the grand duchess Katarina Pavlovna of Russia, who died in 1819, leaving him two daughters, one of whom is the present queen of the Netherlands. He ascended the throne on the sudden death of his father, Oct. 30, 1816. His reign, extending through the revolutionary periods of 1830 and 1848, during both of which domestic peace was preserved, has been marked by economical administration, a moderate liberalism, and a steady opposition to the attempts of Prussia to gain the leadership of Germany.—By his third wife, Pauline, daughter of his uncle Duke Ludwig, to whom he was married April 15, 1820, he has two daughters and one son, the crown prince Karl Friedrich Alexander, born in Stuttgart, March 6, 1823, and married July 13, 1846, to the Russian grand duchess Olga Nicolaievna; this marriage is childless.

WILLIAM, duke of Brunswick-Wolfenbüttel. See Brunswick, House of.

WILLIAM I. and II., electors of Hesse-Cassel. See Hesse-Cassel.

WILLIAM of Champeaux, a French scholastic philosopher, born at Champeaux, near Melun, in the latter part of the 11th century, died in 1121. He studied in Paris under Anselme de Laon, became archdeacon of Notre Dame, and taught with great success and renown in the school of the cathedral. He was at the height of his fame on the arrival of Abelard in Paris (about 1100), who in a short time was successively his pupil, rival, conqueror, and the object of his implacable animosity. Abelard set up a rival school, first at Melun and afterward at Corbeil, and succeeded in drawing off his scholars. He retired in disgust in 1108 into a brotherhood of black canons, founding in a suburb of Paris the abbey of St. Victor. In a few weeks he resumed his lectures on philosophy, theology, and rhetoric; but a general desertion of his pupils leaving his opponent in undisputed supremacy, he again retired, and was raised to the episcopal see of Châlons. He afterward took part in the discussions concerning the right of investiture, and attended the conference of Mousson in 1119 as deputy of Pope Calixtus II. He was one of the most prominent champions of scholastic realism. Of his works, there have been printed only two treatises, entitled *Moralia Abbreviata* and *De Origine Animæ*, in the *Thesaurus* of Martenne, and a fragment on the eucharist, in the 4th volume of Mabillon's edition of the works of St. Bernard. The *De Origine Animæ* treats particularly of the justice of the damnation of unbaptized infants.

WILLIAM of Holland, an emperor of Germany, born in 1227, killed near Hoochwoud in West Friesland, Jan. 28, 1256. He was made emperor at the instance of Pope Innocent IV., as a rival to Frederic II., and was crowned as king of Rome at Aix la Chapelle, Nov. 1, 1248. But the great body of the empire adhered to Frederic, and it was not till the death of that monarch in 1250, and the absence of his son Conrad IV. in Italy, that William seriously undertook to assert his authority, which, however, he could not do effectually until Conrad died in 1254, when he was recognized by nearly all the princes of Germany. He perished as he was leading his troops against the West Frisians; the ice on which he was marching at some distance from his army broke, and his horse sinking into the marsh beneath, he was killed by a body of Frisian peasants, who had no idea they were slaying an emperor.

WILLIAM the Lion. See Scotland.

WILLIAM of Malmesbury. See Malmesbury.

WILLIAM of Nassau, first prince of Orange of that name, surnamed "the Silent," born at Dillenburg, in the duchy of Nassau, April 25, 1533, assassinated at Delft, July 10, 1584. He was the eldest son of William of Nassau-Dillenburg, by Juliana of Stolberg, a woman of rare virtues. At the age of 11 he succeeded to the title and rich domains of his cousin german René, prince of Orange, and, though his father was a Protestant, was sent to Brussels to be educated at the Catholic court of Queen Mary of Hungary. Admitted soon afterward as a page into the household of Charles V., he became at 15 the emperor's intimate friend and constant attendant. No secrets of state were kept from him. Before he was 21 he was appointed general-in-chief of the army on the French frontier in the absence of the duke of Savoy. He was afterward employed in diplomatic missions, and was warmly recommended by the emperor on his abdication to his son Philip II. Philip appointed him the secret negotiator of the preliminary arrangements with France which led to the treaty of Cateau Cambrésis (1559), and after the treaty was signed he and the duke of Alva were selected by Henry II. as hostages for its due execution. During his residence in France, Henry incautiously exposed to him a plot which he had formed with Philip to exterminate "that accursed vermin" the Protestants. It was from the skill with which the prince concealed his horror and surprise at this avowal that he derived the surname of "the Silent," for, far from being taciturn by nature, he was on the contrary of a gay and lively disposition. Obtaining permission to visit the Netherlands, he exerted all his influence to excite the states to a general opposition to the presence of the Spanish troops, of which in conjunction with Egmont he had been appointed commander. He was one of the council whom Philip on his departure for Spain had appointed to assist

Margaret of Parma in the government of the Netherlands. He had received from the monarch particular instructions, as stadtholder of Holland, Friesland, and Utrecht, to enforce vigorously the edicts against Protestants, and there were certain eminent persons whom he had been directed to put to death. These instructions he took the liberty of disregarding. As yet, however, he had no religious sympathy with the reformers. He seemed disposed to an easy, luxurious life, and notwithstanding his vast inherited wealth, to which he had added largely by his marriage at the age of 18 with Anne of Egmont, who died in 1558, he was already deeply in debt. In 1561 he married Anna, daughter of Maurice of Saxony, a Lutheran by religion, deformed in person, and gifted with no attraction except high rank which could have influenced his choice. In 1563, conjointly with Horn and Egmont, he addressed a letter to the king remonstrating against the arbitrary proceedings of Cardinal Granvelle, who had usurped almost the entire administration of the Netherlands, and requesting to be relieved from office unless the minister was removed. The request was not granted, but the three nobles appeared no more at the council until the regent was forced by the growing opposition of the Netherlanders to procure Granvelle's retirement. Philip's favorite scheme, however, of introducing the inquisition into the Netherlands, was accomplished. When the regent wrote to William urging him to enforce the edicts against heretics in his stadtholderate, he replied in a firm but temperate letter, giving his reasons for not doing so. He disapproved of the rash and violent measures of the *gueux* or "beggars;" but when it became evident that pacific resistance to the tyranny of Philip was unavailing, he proposed to Horn and Egmont to unite with him in more forcible measures to prevent the threatened invasion of their country by Spanish troops. Nothing however came of this invitation. In 1567 he was at Antwerp, where he suppressed a formidable insurrection of the Calvinists, to whom as well as to the Anabaptists he was at this period strenuously opposed, though he was already inclining to Lutheranism. Soon afterward, admonished of Philip's designs upon his person, he resigned all his offices, and in April withdrew to his possessions in Germany. Four months later the duke of Alva entered Brussels with his army. Horn and Egmont were seized as traitors; the infamous "blood council" was established; and in Jan. 1568, William was summoned to appear before it. Refusing to acknowledge its jurisdiction, he was proscribed, his property in the Netherlands was confiscated, and his son, Count Buren, a lad of 13, was sent to Spain as a hostage. The prince replied to his condemnation in a short and eloquent "Justification against the false Blame of his Calumniators," published in the summer of 1568, and immediately began to raise money and troops, and concert measures with the Protestant princes of Germany. His first operations were signally unsuccessful. A force of Huguenots and refugees who entered Artois, and another army under Villars near Roermonde, were cut to pieces; and William's brother, Louis of Nassau, after upholding the standard of revolt in Friesland for a few weeks, was routed at Jenneigen and driven back to Germany. The prince himself took the field in September, entering Brabant with 30,000 men; but, unable to bring the wary Alva to a battle, he was forced to retire to French Flanders and disband his army. With his two brothers Louis and Henry, and 1,200 of his soldiers, he now set forth, early in the spring of 1569, to join the Huguenots under the banner of Coligni. He had been approaching the reformed worship step by step, but it was not until 4 years after this (Oct. 1573) that he first publicly attended communion at a Calvinist meeting. In the autumn he returned to Germany and issued commissions to privateers to prey upon the Spanish commerce. A more important service however was rendered by these "beggars of the sea," as they were called. In April, 1572, they captured the city of Briel, and this event was followed by an almost instantaneous revolt throughout the provinces. Flushing, Oudenarde, Dort, Haarlem, Leyden, in fact nearly all the important towns in Holland, Zealand, and Friesland, as well as many cities in Gelderland, Overyssel, and the see of Utrecht, recognized the authority of the prince. Louis of Nassau in the mean time, returning suddenly from France, surprised and captured Mons; and in July William crossed the Rhine with 24,000 troops, captured Roermond, and placed garrisons in several other towns. The massacre of St. Bartholomew cut him off from all hope of assistance from France, upon which he had confidently relied for the means of carrying on the campaign. Once more compelled to disband his army, he betook himself to Holland, the only province that remained faithful to him. Mons surrendered, all the towns of Brabant and Flanders returned to the Spanish allegiance, and Alva took a bloody vengeance upon them for the unsuccessful attempt at revolution. The estates of Holland had recognized William as stadtholder with almost unlimited powers, but it is remarkable that in all his documents he paid apparent reverence to the authority of the king. "By a fiction," says Motley, "which was not unphilosophical, he assumed that the monarch was incapable of the crimes which he charged upon the viceroy. Thus he did not assume the character of a rebel in arms against his prince, but in his own capacity of sovereign he levied troops and waged war against a satrap whom he chose to consider false to his master's orders." In July, 1573, the Spaniards entered and sacked Haarlem, after a siege of 7 months, in which they had lost 12,000 men. On the other hand, an attempt which they made upon Alkmaar was unsuccessful; the patriots gained two important victories by sea, and possessed themselves of the city of Middelburg; and Requesens, who had succeeded Alva as governor of the Netherlands, was too much straitened by an empty treasury to take the offensive. William in the mean time had collected about 6,000 troops at Bommel, and early in 1574 sent orders to his brother Louis, who with aid from France had gathered a few more, to join him. On the way Louis was defeated by Avila, and lost his life together with his brother Henry. In May the siege of Leyden, which the Spaniards had interrupted in order to send all their available troops against Louis, was resumed; but William inundated the country by cutting the dikes, and sent Admiral Boisot with a fleet to relieve the place, the Spaniards taking to flight as the ships approached. The estates of Holland met in Oct. 1574, and proceeded to a more thorough organization of the government, placing nearly all authority in the hands of the prince. In March following a conference was held with the Spanish commissioners at Breda, but Philip was unwilling to grant the only conditions upon which the patriots could accept a peace, namely, freedom of religious worship, the departure of the foreign troops, and the assembling of the states-general. Three months later William, having divorced Anna of Saxony, married Charlotte of Bourbon, daughter of the duke of Montpensier. This lady had been abbess of the convent of Jouarre, from which she fled in 1572, and had embraced the reformed religion. A mutiny among the Spanish soldiers, who proceeded to pillage Brabant and other parts of the country, induced the 5 loyal provinces to join the standard of William, and send deputies to a meeting of the states-general at Ghent (Oct. 1576), where a league was formed against the common enemy, and freedom of worship granted to all denominations. In order to divide the patriots and gain time for preparations, the new governor, Don John of Austria, published a "perpetual edict," granting nearly all the demands of the Netherlanders (Feb. 1577). William, who had secret information of the governor's designs, refused to accept the edict, and repulsed all attempts to gain him over. His popularity had now risen so high that certain of the Catholic nobles became jealous, and invited the young archduke Matthias to become governor-general. William wisely consented, but took care to leave the weak young man only the shadow of authority, while he himself with the title of lieutenant-general continued to share with the states-general the real power of government. Hostilities broke out anew, Alexander Farnese beating the Netherlanders fearfully near Gembloux, Jan. 31, 1578, and Don John occupying Louvain, Nivelles, Tirlemont, and other places. Amsterdam, on the other hand, declared for William; and Elizabeth of England, jealous of the designs of the duke of Anjou, who, invited by the Catholic nobles, had brought a body of troops from France, with the double purpose of repelling the Spaniards and supplanting William, furnished the money for another army of 12,000 men, to be commanded by the elector palatine, John Casimir. William in the mean time had employed himself in quelling the religious feuds among his own countrymen, putting down a rising of the Catholic Walloons, and checking the outrages of the reformers of Ghent. His views of religious toleration were too liberal to suit either party. Anjou and John Casimir both departed with their soldiers without accomplishing any thing, and Alexander Farnese, who had become governor on the death of Don John, succeeded in detaching the Walloon provinces from their adhesion to William, and possessing himself of Maestricht (1579), Mechlin (1579), and Groningen (1580). Before this, however, the prince, through the agency of his brother Count John, had induced Gelderland, Zutphen, Holland, Zealand, Utrecht, and the Frisian provinces to form a league for mutual defence and assistance. The "Union of Utrecht," which is universally regarded as the foundation of the Netherland republic, was concluded in Jan. 1579. Without professing to abandon their allegiance to the king of Spain, the parties to this compact bound themselves together to spend all their treasure and all their blood in expelling the foreign soldiery from their soil; but it soon became apparent that a complete separation from Philip was inevitable, and on July 26, 1581, the United Provinces assembled at the Hague solemnly proclaimed their independence. The sovereignty was offered to the duke of Anjou, but Holland and Zealand obstinately refused to accept any other head than William of Orange. There is no doubt that the other provinces would gladly have submitted to him, for "Father William," as he was called, had the full confidence and affection of the whole people; but he would not expose himself to the danger of having the motives of his past conduct misinterpreted, and he looked to far greater advantages from a connection of the country with France. It was finally arranged that for the present at least the prince should exercise sovereignty over Holland and Zealand, while Anjou assumed the government of the other provinces. After the manifestation of Anjou's treachery the general government was offered to William, but he refused it, and used all his efforts to effect a reconciliation between the provinces and the duke. The war meanwhile had been prosecuted with little energy on either side. In his eloquent discourses to the states-general the prince frequently urged them to a more liberal expenditure of money for the army, but without much effect. In June, 1584, Anjou died in France, and before measures could be taken to appoint his successor William of Orange was assassinated. In March, 1580, Philip had published a ban against the prince, offering 25,000 crowns in gold and a patent of nobility to any one "sufficiently generous of heart to rid us of this pest, delivering him to us, alive or dead, or taking his life," and prefacing the document with a history of the prince's offences; to which William replied before the end of the year in his celebrated "Apology." Several attempts were made upon his life under the influence of the promised reward, and once he was dangerously wounded. The task was at last undertaken by a Burgundian fanatic named Balthazar Gérard, who shot him through the body as he was leaving the dining room. William expired a few minutes afterward in the arms of his wife and sister. The assassin, after undergoing frightful tortures which he bore without a groan, was executed July 14. His right hand was first burned off with a red-hot iron, and his flesh torn from his bones with pincers in 6 different places; he was then quartered and disembowelled alive; his heart was torn out and flung in his face ("Then," says a looker on, "he gave up the ghost"); and finally he was beheaded. Philip ennobled his parents, and granted them three estates belonging to William in Franche Comté.—In person, says Motley, Orange was about the middle height, and perfectly well made, but spare rather than stout. His eyes, hair, beard, and complexion were brown. His head was small and symmetrically shaped, and his brow capacious. Next to piety, his chief characteristic was firmness. His military genius won the admiration of the emperor Charles V., and in political sagacity he was unquestionably before any other statesman in Europe. He left 12 children. By his first wife, Anne of Egmont, he had one son, Count Buren, and one daughter; by the second, Anna of Saxony, one son, the celebrated Maurice of Nassau, and two daughters; by Charlotte of Bourbon, who died in 1582, 6 daughters; and by his fourth wife, Louise, widow of the seigneur de Teligny and daughter of the illustrious Coligni, whom he married in 1583, one son, Frederic Henry, born in Delft in 1584, died in March, 1647, who succeeded Maurice as stadtholder of the republic, and was hardly less distinguished as a military commander than his brother and father, while there is no blot on his reputation as a statesman.—See Motley, "The Rise of the Dutch Republic" (New York, 1855).

WILLIAM OF WYKEHAM, an English architect, ecclesiastic, and statesman, born at Wickham, Hampshire, in 1324, died at Long Waltham, Sept. 27, 1404. He was educated at Winchester school, and on leaving it was appointed secretary to Sir Nicholas Uvedale, governor of Winchester castle. In May, 1356, he was appointed clerk of all the king's works in his manors of Henle and Yeshampsted, and in October of the same year "chief keeper and surveyor of the castles of the king at Windsor, Leeds, Dover, and Hadlee," and of several manors enumerated. By his advice the greater part of the old castle of Windsor was pulled down and rebuilt, and he also built a strong castle at Queenborough in the isle of Sheppey. In 1357 the king gave him the rectory of Pulham in Norfolk, though he was then a layman. About 4 years afterward he was ordained sub-deacon, and in 1362 priest. In 1364 he was made keeper of the privy seal, and in 1366 bishop of Winchester, but he was not consecrated until the next year, through a conflict of authority between the king and the pope. Meanwhile, in Sept. 1367, he was appointed lord high chancellor of England, which office he resigned March 14, 1371. At the instigation of the duke of Lancaster, charges were made against him in 1376 of misappropriations of money while chancellor, which upon investigation were narrowed down to the fact that he had forgiven to one John Grey half of a fine of £80. Upon this the whole of his property was seized, and he was banished from his see. This persecution roused the spirit of the clergy, and great efforts were made by them for Wykeham's restoration, which was achieved upon the accession of Richard II. In 1389 he was again created lord chancellor, but resigned 3 years later, virtually retired from public life, and gave his whole time and care to the foundation of a college at Winchester, and of one at Oxford, still called New college. He rebuilt the cathedral at Winchester.

WILLIAM AND MARY COLLEGE, the oldest seat of learning, except Harvard college, in the United States, founded at Williamsburg, Va., in 1692. An effort had been made as early as 1619 to establish a college at Henrico, near the present city of Richmond. An endowment of £1,500 and 10,000 acres of land was procured, but Mr. Thorpe, who came from England to take the preliminary steps, and the settlers who accompanied him, were massacred in 1622, and the project of the college was relinquished. The subject of establishing a college was often subsequently agitated in the colonial legislature, but the royal governors discouraged it. In 1692 a charter for a college was obtained from England, through the efforts of the Rev. James Blair and of Nicholson, lieutenant-governor of the colony, and took its name from the reigning king and queen, who appropriated lands, funds, and a revenue in tobacco for its support. Buildings were erected in 1693, and Blair was appointed the first president. The first college edifice was destroyed by fire in 1705, and rebuilt the next year, Queen Anne contributing liberally for its restoration. In 1718 £1,000 were granted to the college "for the support of as many ingenious scholars as they should see fit." This money was partly expended for the Nottoway property, the income of which supported several students, who were hence said to be on the Nottoway foundation, and the remainder was invested and its income designated the assembly scholarship. The Nottoway estate was sold in 1777. In 1691 Robert Boyle, the English philosopher, left his whole estate to trustees with the recommendation that it should be expended for the advancement of the Christian religion. The trustees expended £5,400 in the purchase of the Brafferton estate, and gave

£45 of the income to the support of two missionaries to the Indians in New England, £45 to Harvard college, and the remainder to William and Mary college on condition of their supporting one Indian scholar for every £14 received. A house called Brafferton hall was built in 1723 on the college grounds at Williamsburg, and Indian pupils were taught there as late as 1774. The college was at first organized under the title of the "president and master or professors of William and Mary college." It had a body of visitors, who had power to make laws for the government of the college, to appoint the president and professors, and to regulate the amount of their salaries. The teachers were a president and 6 professors. There were two professorships of divinity, one of Greek and Latin, one of mathematics, one of moral philosophy, and Boyle's Indian professorship. The college was allowed a representative in the house of burgesses. Two copies of Latin verses were every year presented to the royal governor as a quitrent for the lands granted by the crown. At the revolution the college endowments were very much diminished; the colonial revenue taxes were discontinued, and the Brafferton fund was lost. The two divinity professorships were abolished, and others substituted for them. At the commencement of the war half of the students, of whom James Monroe was one, entered the army. At the siege of Yorktown the French troops occupied a part of the college buildings as a hospital, and while they had possession of them the president's house was burned; the French government promptly paid for its rebuilding. The college buildings were much injured by this occupation, but the U. S. government never made any remuneration. The following persons have been presidents of the college: the Rev. James Blair from its foundation till his death in 1743; the Rev. William Dawson till 1752; William Stith, the historian of Virginia, till 1755; Thomas Dawson till 1761; William Yates till 1764; James Horrocks till 1771; John Cannon till 1777; the Rev. James Madison, D.D., bishop of Virginia, till his death in 1812; John Bracken till 1814; John Augustine Smith, M.D., till 1826; the Rev. W. H. Willmer till his death in 1827; the Rev. Adam Empie till 1836; Thomas R. Dew till his death in 1846; Robert Saunders till 1848; Benjamin S. Ewell till 1849; Bishop John Johns till 1854, when Benjamin S. Ewell, the present incumbent, was again elected. In 1782 a law department was added to the college. Presidents Jefferson, Madison, Monroe, and Tyler were graduates of this college, and Chief Justice Marshall and Gen. Scott were also connected with it as students. The literary society of the Phi Beta Kappa originated at William and Mary in 1775, and the affiliated society at Harvard derived its charter from this. In 1781, when the college was temporarily broken up, the society was interrupted, and was not revived till 1850, when it was found that its president was still living, and that its records were in the possession of the Virginia historical society. The college has now two principal edifices beside the president's residence, and in 1860 had 6 professors, 3,000 alumni, 60 students, and a library of 53,000 volumes.

WILLIAMS, the extreme N. W. co. of Ohio, bordering on Indiana and Michigan, and intersected by the St. Joseph's and Tiffin rivers; area, 600 sq. m.; pop. in 1860, 16,632. The surface is generally undulating and the soil fertile. The productions in 1850 were 84,332 bushels of wheat, 105,922 of Indian corn, 37,440 of oats, 86,615 lbs. of butter, and 4,431 of hay. There were 2 churches, 2 newspaper offices, and 2,040 pupils attending public schools. The Michigan southern and northern Indiana railroad traverses the county. Capital, Bryan.

WILLIAMS, CHARLES KILBORN, an American jurist, born in Cambridge, Mass., Jan. 24, 1782, died in Rutland, Vt., March 9, 1853. He was a son of the Rev. Samuel Williams, the historian of Vermont, was graduated at Williams college in 1800, and admitted to the bar in 1804. He represented Rutland in the state legislature 6 years between 1809 and 1821, and again in 1849, was state attorney for the county of Rutland in 1814-'15, a judge of the supreme court in 1823-'4, collector of customs for the district of Vermont from 1825 to 1829, and judge of the supreme court from 1827 to 1846, being for the last 13 years of that time chief justice and *ex officio* chancellor. In 1847 he was unanimously elected a member of the council of censors, of which he was made president. In 1850 and 1851 he was elected governor of the state, but declined a reëlection in 1852.

WILLIAMS, ELEAZAR, an American clergyman, supposed to be a grandson of Eunice, daughter of "the redeemed captive," born at Caughnawaga, N. Y., about 1787, died at Hoganstown, N. Y., Aug. 28, 1858. He was educated by friends of his supposed grandmother at Long Meadow, Mass., served among the Canadian Indians as a secret agent of the United States in the war of 1812, took orders in the Episcopal church in 1826, lived as a missionary among the Indians at Green Bay and elsewhere, and translated the Prayer Book into the Mohawk tongue. About 1842 he began to make known his claim to be the son of Louis XVI. and Marie Antoinette, who had been successfully abstracted from his revolutionary prison in Paris, and brought to America by an agent of the royal family. The story attracted no great attention until it was taken up by the Rev. J. H. Hanson of New York, who set it forth with great ingenuity and plausibility in a series of articles in "Putnam's Monthly" in 1853, which were afterward collected in a volume entitled "The Lost Prince" (New York, 1854). Mr. Williams was thought by believers in his pretended royal descent to possess a striking Bourbon countenance; to others he seemed to be simply a good-looking, good-natured, portly half-breed Indian.

WILLIAMS, Ephraim, a colonel in the colonial army of Massachusetts, born at Newton, Mass., in 1715, killed near Lake George, Sept. 8, 1755. In early life he was a sailor. In the war with France from 1740 to 1748, he served as captain of a New England company in Canada, and when hostilities broke out afresh was put in command of a regiment and ordered to join the New York forces under Gen. (afterward Sir William) Johnson, who were marching northward to attack the French. He was proceeding with a large body of soldiers to attack Dieskau's advance force, when the whole party was entrapped in an ambuscade of French and Indians, and at the first fire Col. Williams fell mortally wounded by a shot in the head. Most of his property was left by his will for the establishment of a free school in Massachusetts, of which Williams college was the result. (See Williams College.)

WILLIAMS, Helen Maria, an English authoress, born in the north of England in 1762, died in Paris in Dec. 1827. She went to London at the age of 18, and was introduced to public notice by Dr. Andrew Kippis, who recommended very highly her first work, a legendary tale in verse entitled "Edwin and Elfrida," which was published in 1782. Between this period and 1788 she published an "Ode on Peace" (1783); "Peru, a Poem" (1784); a collection of miscellaneous poems (2 vols. 8vo., 1786); and "The Slave Trade, a Poem" (1788). In 1790 she settled in Paris, and in the same year published a series of "Letters from France," and in 1792 a second series. These "Letters" advocated the doctrines of the Girondists, and on their downfall she was in great danger, and was for some time imprisoned. Her remaining works are: "Travels in Switzerland;" "Narrative of Events in France" (1815); "Correspondence of Louis XVI., with Observations;" "Letters on the Events which passed in France since the Restoration in 1815;" an English translation of Humboldt and Bonpland's "Personal Narrative" (6 vols. 8vo., 1814-'21); "Julia," a novel; and a collection of poems (1823).

WILLIAMS, John, an American clergyman, known as "the redeemed captive," born in Roxbury, Mass., Dec. 10, 1644, died in Deerfield, Mass., June 12, 1729. He was graduated at Harvard college in 1683, and was ordained pastor of the church in Deerfield, Oct. 17, 1688. On the night of Feb. 28, 1704, a party of 300 French and Indians surprised the town, and some of them, breaking open Mr. Williams's house, killed two of his children and his negro servant, and forced him with his wife and 6 of his surviving children (his son Eleazar was absent) to set out with other prisoners for Canada. On the second day's march Mrs. Williams fell from exhaustion, and was despatched with a tomahawk. About 20 other prisoners were murdered under similar circumstances. On his arrival in Canada, after a journey attended by almost unexampled hardships, he was treated by the French with great humanity and even courtesy, and at length was redeemed, and arrived in Boston, Nov. 21, 1706, with 57 other captives, among whom were two of his children. His daughter Eunice, 10 years of age, was left behind, and married an Indian. Mr. Williams, soon after his return, resumed his pastoral charge at Deerfield, and published a narrative of his captivity, entitled "The Redeemed Captive." By a second wife he had 5 children. Three of his sons were clergymen.

WILLIAMS, John, an English missionary, born at Tottenham, near London, June 29, 1796, murdered by the natives at Dillon's bay in the island of Erromango, one of the New Hebrides group, Nov. 20, 1839. He was apprenticed at the age of 14 to an ironmonger, but at 20 offered himself to the London missionary society as a missionary, and was sent out with his wife to Eimeo, one of the Society islands. Thence, after acquiring a knowledge of the language, they removed, first to Huaheine, and finally to Raiatea, the largest of the Society group. He was very successful here for about 5 years, after which, with a vessel which he had purchased at Sydney, he visited the Hervey islands and founded a mission at Raratonga (1823). Leaving his converts under the care of a native teacher, he resided at Raiatea until he had learned the language of the Hervey islands. He then returned to Raratonga (1827), where he prepared some books, and translated a portion of the Bible. Wishing to go back to Raiatea, and finding no vessel, he resolved to build one. He made all the necessary tools, and in the course of 15 weeks launched a boat 60 feet long and 18 wide, the sails being made of native matting, the cordage of the bark of the *hibiscus*, the oakum of cocoanut husks and banana stumps, and the sheaves of ironwood. In this vessel, within the next 4 years, he explored almost the whole of the South sea islands, and visited Tahiti, Raiatea, and Raratonga, more than once. During this time the Samoan mission was established, the translation of the New Testament into the Raratongan language completed, and the people of the island civilized and Christianized. In 1834 he visited England, where his adventures made him an object of great attention. He remained there nearly 4 years, procured the publication of his Raratongan Testament by the British and foreign Bible society, raised £4,000 for the purchase and outfit of a missionary ship, the Camden, wrote and published a "Narrative of Missionary Enterprises in the South Sea Islands, with Remarks upon the Natural History of the Islands, Origin, Languages, Traditions, and Usages of the Inhabitants," and prepared and advocated plans for a theological school for the education of native missionaries at Raratonga and a high school at Tahiti. In April, 1838, he embarked on his return to his field of labor with 16 other missionaries. Having visited the Samoan group, Raratonga, and Tahiti, Mr. Williams, with one companion, sailed for the New Hebrides, hoping to plant a mission there, but both were killed by the natives, who were irritated by the injuries they had received from the crew of a vessel which had landed there shortly before. The greater part of his body was eaten by the savages.—Several memoirs of Mr. Williams have been published; the most complete is that by the Rev. Ebenezer Prout.

WILLIAMS, Monier, an English orientalist, born in Bombay, where his father was surveyor-general, in 1819. He studied successively at King's college, London, Baliol college, Oxford, the East India company's college at Haileybury, and University college, Oxford, where he was graduated in 1844. From 1844 to 1858 he was professor of Sanscrit at Haileybury college. After the abolition of that institution in 1858, he superintended the oriental studies at Cheltenham for two years. In Dec. 1860, he was elected Boden Sanscrit professor at Oxford. He has published a "Practical Grammar of the Sanscrit Language, arranged with reference to the Classical Languages of Europe" (1846; 2d ed., Oxford, 1857); an English-Sanscrit dictionary (1851); translations of three of the Sanscrit dramas (1849-'55); "Original Papers illustrating the History of the Application of the Roman Alphabet to the Languages of India" (1859); "Story of Nala," a Sanscrit poem, with vocabulary and Dean Milman's translation (Oxford, 1860), &c.

WILLIAMS, Otho Holland, an American general, born in Prince George's co., Md., in 1748, died July 16, 1794. Previous to the revolution he was employed in the county clerk's offices in Prince George's and Baltimore counties, and when the war broke out was appointed a lieutenant in the rifle company raised in Frederick county. He became a prisoner when Fort Washington in New York was taken by the English, the regiment of which he was then major forming part of the garrison. Being soon exchanged, he was placed in command of the 6th Maryland regiment, and was afterward adjutant-general to Gates, in which capacity he served to the end of the war. He distinguished himself in the battle of Camden, and was very useful in thwarting the various attempts of Cornwallis to surprise Gen. Greene, after the return of the latter into North Carolina. In May, 1782, he was appointed a brigadier-general.

WILLIAMS, Roger, the founder of the state of Rhode Island, born in Wales in 1606, died in Rhode Island in 1683. He was the son of William Williams, of Conwyl Cayo, near Lampeter, Caermarthenshire. The tradition which makes him a relative of Oliver Cromwell is slenderly supported. That he was religiously educated may be inferred from a reference to his early years made late in life. "From my childhood," he says, "now about threescore years, the Father of lights touched my soul with a love to himself, to his only begotten, the true Lord Jesus, and to his Holy Scriptures." While yet a youth we find him in London, attracting by his shorthand notes of sermons, and of speeches in the star chamber, the attention of Sir Edward Coke, who, "seeing so hopeful a youth, took such liking to him, that he sent him in to Sutton's hospital." He was elected a scholar of Sutton's hospital, now the Charterhouse, July 25, 1621, and obtained an exhibition July 9, 1624, having already (April 30) entered Jesus college, Oxford. How long he remained at the university is not known. Logic and the classics, paramount in the studies of Oxford, left their traces deeply on his mind. Perhaps nothing indicates more precisely the scope and character of his learning than the following passage in a letter to his friend, Gov. Winthrop of Connecticut. From 1652 to 1654 he had been in England on colonial business, and writing, soon after his return, of his employments while there, he says: "It pleased the Lord to call me for some time, and with some persons, to practise the Hebrew, the Greek, Latin, French, and Dutch. The secretary of the council (Mr. Milton), for my Dutch I read him, read me many more languages. Grammar rules begin to be esteemed a tyranny. I taught two young gentlemen, a parliament man's sons, as we teach our children English, by words, phrases, and constant talk," &c. There is a tradition that on leaving the university he studied law under the direction of his patron; but if so, it could have been for a short time only, for it is certain that he had been a clergyman of the church of England when at the close of 1630 he embarked for America. The causes which kept his friend Milton from entering the sacred office very soon compelled Williams to abandon it. He became a Puritan of the extreme wing, and of that section of the wing whose tendencies to the views of the Baptists were the immediate occasion of the rapid rise of that denomination in England. Arriving at Boston, Feb. 5, 1631, "a young minister, godly and zealous, having precious" gifts, and accompanied by his wife Mary, he soon incurred the hostility of the authorities by his religious opinions, and chiefly by denying that the magistrates had a right to punish for any but civil offences, and proceeded within a few weeks to Salem to become the assistant of Skelton, pastor of the congregation of that town. A remonstrance from the general court against his settlement was immediately transmitted to Salem, in which it was complained that he had refused "to join with the congregation at Boston, because they would not make a public declaration of their repentance for having communion with the churches of England, while they lived there;" and beside this, "had declared his opinion that the magistrate might not punish a breach of the sabbath, nor any other offence, as it was [perhaps, considered as] a breach of the first table." The objections of Williams to the church of England were, first, that it was composed of pious and worldly men indiscriminately, and second, that it assumed authority over the conscience, and was persecuting. The first of these objections the Puritans of Boston shared with Williams; the last assailed the theocracy which they themselves were rearing on the shores of New England. His ministry at Salem was brief. Persecution instantly commenced, and before the close of summer he was obliged to retire to Plymouth. Here he was kindly received, and during two years he was the assistant of the pastor, Mr. Ralph Smith. Here too he formed acquaintance with leading chiefs of the Indians, and gained a knowledge of their language. Anxious to return to Salem, the reluctance of the people of Plymouth to submit to his departure was overcome by the politic Brewster, who expressed the fear that Williams would "run the same course of rigid separation and Anabaptistry which Mr. John Smyth" had run at Amsterdam. Resuming his ministerial labors at Salem, he became the successor of Skelton, and, according to the testimony of his enemies, "in one year's time he filled that place with principles of rigid separation, tending to Anabaptism." The sentence of banishment, declared by the general court late in the autumn of 1635, was in these words: "Whereas Mr. Roger Williams, one of the elders of the church at Salem, hath broached and divulged divers new and dangerous opinions against the authority of magistrates; as also writ letters of defamation, both of the magistrates and churches here, and that before any conviction, and yet maintaineth the same without any retractation; it is therefore ordered, that the said Mr. Williams shall depart out of this jurisdiction within six weeks now next ensuing, which, if he neglect to perform, it shall be lawful for the governor and two of the magistrates to send him to some place out of this jurisdiction, not to return any more without license from the court." He had called in question the authority of magistrates in respect to two things, one relating to the right of the king to appropriate and grant the lands of the Indians without purchase, and the other to the right of the civil power to impose faith and worship. On the first of these points Williams at one time made explanations that were deemed satisfactory; on the other the divergence was hopeless, the ministers who gave their advice at the request of the court declaring that opinions which would not allow the magistrate to intermeddle, even to restrain a church from heresy or apostasy, were not to be endured, and he, on the other hand, maintaining with inflexible rigor the absolute and eternal distinction between the spheres of the civil government and the Christian church. The "letters of defamation" were but a subordinate and unimportant count in the indictment. One of these was an appeal to the churches against a decision of the magistrates, and the other was a letter to his own church in favor of those principles of rigid separation which he had advocated from the beginning. The charges urged against him are thus stated by Williams, in his pamphlet entitled "Mr. Cotton's Letter Examined and Answered:" "After my public trial and answers at the general court, one of the most eminent magistrates, whose name and speech may be by others remembered, stood up and spake: 'Mr. Williams,' said he, 'holds forth these four particulars: First, that we have not our land by patent from the king, but that the natives are the true owners of it, and that we ought to repent of such a receiving it by patent. Secondly, that it is not lawful to call a wicked person to swear, [or] to pray, as being actions of God's worship. Thirdly, that it is not lawful to hear any of the ministers of the parish assemblies in England. Fourthly, that the civil magistrate's power extends only to the bodies, goods, and outward state of men, &c.' I acknowledge the particulars were rightly summed up, and I also hope that, as I then maintained the rocky strength of them to my own, and other consciences' satisfaction, so, through the Lord's assistance, I shall be ready for the same grounds not only to be bound and banished, but to die also in New England, as for most holy truths of God in Christ Jesus."—It is not improbable that a settlement in the territory around Narraganset bay, not embraced within the limits of any existing colony, had been already contemplated by Williams. It is certain that a purpose of this kind ripened rapidly after the sentence of banishment had been pronounced. Great indignation at that event was felt by his friends, and these to the number of 20 or more were ready to share his fortunes in an undertaking of that kind. The period allowed him to prepare for his departure had been extended to the coming spring. But the infection of his doctrines was spreading, and his purpose of founding a colony, close at hand, and embodying his principles, had become known. It was determined, therefore, to send him to England at once, and a small vessel was despatched to Salem to bring him away. Williams, however, obtained notice of what was doing, and was already beyond reach when the vessel arrived. In midwinter, abandoning his friends and his family, "sorely tossed for 14 weeks, not knowing what bread or bed did mean," he had betaken himself to the wilderness, and "steered his course" for the shores of the Narraganset. Purchasing of Ousamequin lands on the eastern shore of the Seekonk river, he had planted his corn for the season, when, ascertaining that he was within the bounds of Plymouth colony, he set out, with 5 companions, on new explorations. Embarking in a canoe, they proceeded down the stream, turned the extremity of the peninsula, and ascended the river which forms its western boundary, to a spot which tradition has consecrated as their landing. "I having made covenant of peaceable neighborhood with all the sachems and nations round about us," says Williams, "and having, of a sense of God's merciful providence unto me in my distress, called the place Providence, I desired it might be for a shelter for persons distressed for conscience." The fundamental article of government, establishing a pure democracy, with absolute inhibition of control over the consciences of men, which persons admitted to this remarkable corporation were required to sign, was in these words: "We, whose names are hereunder, desirous to inhabit in the town of Providence, do promise to subject ourselves, in active or passive obedience, to all such orders or agreements as shall be made for public good of the body, in an orderly way, by the major consent of the present inhabitants, masters of families, incorporated together in a town fellowship, and others whom they shall admit unto the same, only in civil things." The method of planting the first church in Providence, now known as the first Baptist church in that city, answers perfectly to the views touching that matter which had been set forth in Holland by Smyth and Helwys. When Smyth and his followers in Amsterdam became Baptists, they hesitated to ask baptism of the orthodox Dutch Anabaptists, because they did not in all points agree with the Dutch in opinion. They therefore instituted baptism among themselves by authorizing certain of their own number to be administrators of the rite. This example was followed at Providence, the colonists instituting baptism among themselves, in March, 1639. Ezekiel Holliman, a layman, first baptized Williams, and then Williams baptized Holliman, "and some ten more." Thus was founded the first Baptist church in America. But Williams seems to have had immediate doubts of the validity of the proceeding, and soon withdrew from his associates in this measure. Various explanations of his withdrawing have been given, and prominent among these the absence of "a visible succession" of authorized administrators of the rite of baptism. The history of Roger Williams, for the succeeding period of near half a century, is the history of Providence and of Rhode Island. The colony was for some years a pure democracy, transacting its public business in town meetings. The rise of neighboring settlements at Portsmouth and Newport rendered necessary both an authority better recognized and a common government. Williams was therefore appointed, in 1642, an agent to visit England for the purpose of procuring a charter. This mission he successfully accomplished the next year, returning in 1644. While on his voyage to England, he wrote his "Key into the Languages of America," a work which included likewise observations on the manners, habits, laws, and religion of the Indian tribes. Beside this work, he published during his residence abroad a pamphlet entitled "Mr. Cotton's Letter Examined and Answered," and "The Bloudy Tenent of Persecution for Cause of Conscience, discussed in a Conference between Truth and Peace." This last, in which were set forth the nature and sphere of civil government, was the great literary labor of his life. On the occurrence of new difficulties in the colony, he was again sent to England in 1651, and was equally successful in executing his mission. While abroad the second time he published "Experiments of Spiritual Life and Health, and their Preservatives," a practical religious work, dedicated to his friend Lady Vane, which he says was written "in the thickest of the native Indians of America, in their very wild houses, and by their barbarous fires." He published at this time likewise "The Hireling Ministry none of Christ's, or a Discourse touching the Propagating the Gospel of Christ Jesus," and "The Bloudy Tenent yet more Bloudy by Mr. Cotton's Endeavor to wash it white in the Blood of the Lamb." It was during his second stay in England that he was for a time engaged in teaching, and that he enjoyed the intimate friendship of Milton. He returned to Rhode Island in 1654, and in September of the same year was elected president of the colony, an office which he held for 2½ years. He refused to persecute the Quakers, but had a celebrated controversy with them in 1672, meeting three of the most eminent preachers of the sect in public debate at Newport, and afterward published a controversial work, the last probably and the least creditable of his publications, entitled "George Fox digged out of his Burrowes." The magistrates of Massachusetts seem never to have relented toward him, the principles and character of the colony he had founded precluding reconciliation; though he was permitted to visit Boston and to pass through it on his voyages to and from England, not even the interference of the English authorities could induce the removal of the ban under which the magistrates had placed him. His influence with the Indians enabled him to render signal services to the colonies around him, by averting from them the calamities of savage war; but they refused to admit Rhode Island into the New England league, and even put obstacles in the way of her procuring the means of defence. He "was buried with all the solemnity the colony was able to show," in his family burying ground, near the spot where he landed, and a monument is to be erected over his grave.—Memoirs of the life of Roger Williams have been written by James D. Knowles (Boston, 1833), William Gammell (Boston, 1846), and Romeo Elton (London, 1852).

WILLIAMS, Samuel, LL.D., an American clergyman and scholar, born in Waltham, Mass., April 23, 1743, died in Rutland, Vt., Jan. 2, 1817. He was a grandson of the Rev. John Williams of Deerfield, was graduated at Harvard college in 1761, licensed to preach in 1763, and ordained as pastor of the Congregational church in Bradford, Mass., in 1765. He was elected professor of mathematics and natural philosophy in Harvard college in 1780, and filled the post for 8 years, being also for part of that period professor of astronomy. In 1785 the university of Edinburgh conferred on him the degree of LL.D., and in 1786 he received the same degree from Yale college. He surveyed the W. boundary of Massachusetts in 1786, and the boundary line of Vermont in 1805. He was the author of a "Natural and Civil History of Vermont" (1794; enlarged ed., 2 vols., 1809).

WILLIAMS, Samuel Wells, LL.D., an American sinologue, born in Utica, N. Y., in Sept. 1812. He was educated at the Rensselaer school in Troy, and went to China in 1833 as a printer in the newly-established mission of the American board of commissioners for foreign missions at Canton. Here he began the study of the Chinese language, and assisted in editing the "Chinese Repository," a monthly publication started the year before by Dr. Bridgman. In 1835 he removed to Macao to complete the printing of Medhurst's Hokkeën dictionary; and in July, 1837, he went to Japan in a vessel sent by C. W. King of Canton to return to their homes 7 shipwrecked Japanese; she was driven away from two ports by cannon balls, and the men were brought back to Macao. Mr. Williams obtained from some of them an acquaintance with their language, translated a treatise on smelting copper from the original, and made a version of the book of Genesis and the Gospel of St. Matthew into the Japanese. After the publication of Dr. Bridgman's "Chinese Chrestomathy," to which Mr. Williams contributed about one third, he printed in China his "Easy Lessons in Chinese" (1841), "English and Chinese Vocabulary" (1843), and "Chinese Commercial Guide" (1844). In Nov. 1844, he set out for America, passing through Egypt, Syria, and Europe, and reaching New York in Oct. 1845. The project of casting a font of movable Chinese type in Berlin had been started, and to obtain funds for the enterprise he delivered lectures on the condition of China, which were afterward enlarged and published under the title of "The Middle Kingdom" (2 vols. 12mo., New York, 1848). Soon after the publication of this work, the faculty of Union college conferred upon him the degree of LL.D. In 1848 he returned to Canton, and took charge of the "Chinese Repository," which was closed in 1851 with its 20th volume. In 1853-'4 he accompanied Com. Perry's expedition to Japan as interpreter. In 1855 he was appointed secretary and interpreter to the U. S. legation, and took charge of it until the arrival of the minister, Mr. Parker. He published in 1856 a "Tonic Dictionary of the Chinese Language," and in 1858 went with Mr. Reed to Tien-tsin to assist in the negotiations connected with the treaty, and the next year with Mr. Ward to Peking to exchange the ratifications. In 1860 he revisited the United States, and delivered lectures before the Smithsonian institution and elsewhere.

WILLIAMS, Thomas Scott, LL.D., an American jurist, born in Wethersfield, Conn., June 26, 1777, died in Hartford, Dec. 15, 1861. He was graduated at Yale college in 1794, and studied law at the Litchfield law school and in the office of Judge (afterward Chief Justice) Swift in Windham, Conn., where he was admitted to the bar in 1799, and in 1803 settled in Hartford. He represented Hartford in the state assembly 7 times between 1813 and 1829, and in congress from 1817 to 1819. In 1829 he was appointed an associate judge of the supreme court of errors, and in 1834 was chosen chief justice, which office he held till 1847, when his term expired by the constitutional limitation of age. From 1831 to 1835 he was mayor of the city of Hartford, and for 20 years was president of the board of trustees of the American asylum for the deaf and dumb at Hartford. He was at the time of his death and for several years previously president of the American tract society, was a large contributor to objects of benevolence, and bequeathed nearly $30,000 to charitable institutions.

WILLIAMS, William, a signer of the declaration of independence, born in Lebanon, Windham co., Conn., April 8, 1731, died there, Aug. 2, 1811. He was graduated at Harvard college in 1751. In 1755 he accepted a commission on the staff of Col. Ephraim Williams, and made one campaign. After the revolutionary troubles began he was an active member of the council of safety, and in Oct. 1775 was chosen a representative in the continental congress. His property was nearly all expended in the war, and he was very active in obtaining private donations to supply the army, going from house to house to collect any articles that could relieve a destitute soldier. He held nearly every office in the gift of his constituents, served nearly 50 years in the state legislature, and was a member of the convention of his state which adopted the federal constitution.

WILLIAMS, Sir William Fenwick, an English general, born in Halifax, Nova Scotia, Dec. 10, 1800. He was taken to England in his childhood, entered the military school at Woolwich, was commissioned second lieutenant of artillery in 1825, and became first lieutenant in 1827 and captain in 1840. During his lieutenancy he served 9 years in Ceylon, and on receiving his captain's commission was sent to Turkey, where his military services won him the brevet rank of major; and the ability he displayed in the conference with the Turkish and Persian commissioners obtained him the brevet rank of lieutenant-colonel in 1847. In 1852 he was made companion of the bath. In Aug. 1854, he was appointed British commissioner with the Turkish army in the East, and promoted to the rank of colonel, and a few months later to that of brigadier-general. His head-quarters were at Kars near Erzroum, and upon the heights above that city, which had then been invested for 4 months, his force repulsed with terrible slaughter the attack of the Russian general Muravieff, Sept. 29, 1855. But his men becoming worn out by famine, on Nov. 14 he accepted terms of capitulation from Gen. Muravieff. He was sent as a prisoner to St. Petersburg, where he was treated with great honor. On the conclusion of the treaty of peace in March, 1856, he returned to England.

For his gallant conduct in the battle of Sept. 29 he had been made K.C.B., raised by the sultan to the rank of a *mushir* or full general in the Turkish service, and on his return to England was further rewarded by a baronetcy (called "of Kars"), a life pension of £1,000, the Turkish order of the *Medjidie*, the degree of D.C.L. from Oxford, and the freedom of the city of London. He was elected soon after member of parliament for Calne, and was in 1860 appointed to the command of the forces in British America, where he still remains.

WILLIAMS, William R., D.D., an American clergyman, born in New York, Oct. 14, 1804. He was graduated at Columbia college, New York, in 1822, studied law in the office of the Hon. Peter A. Jay for three years, practised for a year, and after a visit to Europe relinquished brilliant prospects of success in the legal profession, and entered upon the ministry in the Baptist denomination. He was installed pastor of the Amity street Baptist church, New York, at the time of its formation in 1831, and still retains that office, notwithstanding numerous and pressing solicitations from colleges, theological seminaries, and other bodies to accept more conspicuous positions. He has published 2 volumes of discourses, "Religious Progress" (Boston, 1850) and "Lectures on the Lord's Prayer" (Boston, 1851), and a volume of "Miscellaneous Addresses" (New York, 1850), &c., and is understood to be preparing a work on ecclesiastical history.

WILLIAMS COLLEGE, an institution of learning, situated in Williamstown, Berkshire co., Mass. It owes its origin to the bequest of Col. Ephraim Williams, who died in 1755, and who in his will directed, after certain other provisions, "that the remainder of his lands should be sold, at the discretion of his executors, within 5 years after an established peace; and that the interest of the moneys arising from the sale, and also the interest of his notes and bonds, should be applied to the support of a free school in a township west of Fort Massachusetts; provided that said township fall within the limits of Massachusetts, after running the line between Massachusetts and New York; and provided the said township when incorporated be called Williamstown." The property was sold, and the funds were allowed to accumulate till 1785, when a free school was incorporated by the legislature, 9 trustees appointed, and a lottery granted for raising funds to erect a school house; about $3,500 were thus obtained, the inhabitants of the town raised about $2,000 more, and in 1790 a brick building (now the West college), 82 feet long, 42 broad, and 4 stories high, was completed. The free school was opened Oct. 20, 1791, the Rev. Ebenezer Fitch being the first principal. There were two departments, an academy or grammar school, and an English free school. In 1793 the institution was incorporated as a college under the name of Williams hall; the property vested in the free school was transferred to the college, and a grant of $4,000 was made from the state treasury to purchase a library and apparatus. Mr. Fitch was appointed president, and entered upon his duties in Oct. 1793. The academy was continued till 1806. The first commencement of the college was held Sept. 2, 1795, when 4 students received the degree of B.A. In 1796 the legislature granted two townships of land, which were sold for $10,000. A catalogue was published in 1795, said to have been the first college catalogue ever printed in this country. The college had then 77 students, and in 1804 the number had risen to 144. In 1805 and 1809 two other townships of land were granted it by the legislature, from which about $10,000 were realized. In 1810 Woodbridge Little of Pittsfield bequeathed $5,500 to the college for the benefit of indigent students. It continued to prosper till 1808, when, in consequence of a disagreement between the students and some of the officers, it began to decline. In 1815 the Rev. Zephaniah Swift Moore became president. Under his administration strong efforts were made to remove the college to Northampton, but the inhabitants of Berkshire co. raised $17,500 to be paid to the college on condition that it should not be removed, and the legislature refused to sanction the removal. Upon this Dr. Moore resigned (1821), and became president of Amherst college. He was succeeded by the Rev. Edward Dorr Griffin, D.D., under whom the college began to regain its former prosperity. The Berkshire medical institution at Pittsfield was placed under its supervision. An alumni association was formed and raised $5,000, the interest of which was to be expended for the purchase of apparatus and instruments. Other friends of the college raised a fund of $25,000, and several bequests were received for the increase of the library and the aid of indigent students. Dr. Griffin resigned in 1836, and was succeeded by the Rev. Mark Hopkins, the present incumbent. In 1836 an astronomical observatory, said to have been the first erected on this continent, was built mainly through the instrumentality of Prof. Albert Hopkins, who also erected and presented to the college a magnetic observatory. In Oct. 1841, the building known as East college was destroyed by fire; and during the succeeding summer two new edifices, East and South colleges, were erected. In 1844-'6 Amos Lawrence of Boston made several large donations to the college, amounting in all to about $30,000, with a portion of which a library building was erected and named Lawrence hall. Within the last 8 years, donations to the amount of $25,000 have been made by Mr. Nathan Jackson of New York, from the proceeds of which a building (Jackson hall) has been erected to contain the collections of the lyceum of natural history. In 1860 Alumni hall was erected. In 1860-'61 the college had 11 instructors, 240 students, and a library of 20,000 volumes. The number of graduates had been 1,711.

WILLIAMSBURG, a S. E. district of South Carolina, bounded N. E. by Lynch's creek and the Great Pedee river, and S. W. by the Santee, which is here navigable by steamboats, and drained by Black river; area, 1,200 sq. m.; pop. in 1860, 15,489, of whom 10,259 were slaves. The surface is level and diversified by pine forests, and the soil is generally fertile. The productions in 1850 were 239,713 bushels of Indian corn, 143,052 of sweet potatoes, 354,543 lbs. of rice, and 4,298 bales of cotton. There were 17 churches, and 378 pupils attending public schools. Capital, Kingstree.

WILLIAMSBURG, N. Y. See BROOKLYN.

WILLIAMSBURG, a city and the capital of James City co., Va., 60 m. S. E. from Richmond, and 68 m. N. W. from Norfolk, by the course of the river and bay; pop. about 1,500. It is situated on a level plain, equidistant from the York and James rivers, and contains 3 churches, Episcopal, Baptist, and Methodist. It is the seat of William and Mary college (see WILLIAM AND MARY COLLEGE), and also of the eastern lunatic asylum, which in 1859 had 300 patients (174 males and 126 females), and expends about $55,500 annually. Williamsburg is the oldest incorporated town in the state, having been founded in 1632. It was the seat of government for the colony till the revolution, and afterward capital of the state till 1779. A battle was fought here between a portion of the federal forces under Gen. McClellan and the confederates, May 5, 1862, during the retreat of the latter from Yorktown to Richmond.

WILLIAMSON. I. A central co. of Texas, drained by San Gabriel river and its tributaries; area, 1,007 sq. m.; pop. in 1850, 1,568; in 1860, 4,529, of whom 897 were slaves. The surface is level and diversified by prairie and woodland, and the soil is very fertile. The productions in 1850 were 57,015 bushels of Indian corn, 2,458 of sweet potatoes, 58,950 lbs. of butter, and 3,499 of wool. Capital, Georgetown. II. A central co. of Tenn., drained by the head streams of the Harpeth river; area, 476 sq. m.; pop. in 1860, 23,827, of whom 12,367 were slaves. The surface is generally hilly and the soil highly fertile. The productions in 1850 were 43,854 bushels of wheat, 1,697,570 of Indian corn, 223,193 of oats, 75,793 of sweet potatoes, 153,297 lbs. of butter, 1,302,209 of tobacco, 5,314 bales of cotton, and 2,127 tons of hay. There were 20 grist mills, 14 saw mills, 12 tanneries, 49 churches, a newspaper office, and 784 pupils attending schools. Iron ore and some other minerals are found. The county is intersected by the Tennessee and Alabama railroad. Capital, Franklin. III. A S. co. of Ill., drained by Big Muddy river and other streams; area, 432 sq. m.; pop. in 1860, 12,205. The surface is diversified by prairie and woodland, and the soil is fertile. The productions in 1850 were 6,376 bushels of wheat, 235,729 of Indian corn, 33,164 of oats, 59,131 lbs. of butter, and 536,268 of tobacco. There were 21 churches, and 360 pupils attending public schools. Bituminous coal is abundant. Capital, Marion.

WILLIAMSON, HUGH, M.D., LL.D., an American physician, born in West Nottingham, Penn., Dec. 5, 1735, died in New York, May 22, 1819. He was graduated at the university of Pennsylvania in 1757, and was licensed to preach in 1759, but was compelled by ill health to abandon that vocation. In 1760 he was appointed professor of mathematics in the university of Pennsylvania, but in 1764 resigned, studied medicine at Edinburgh and Utrecht, and on his return settled in practice at Philadelphia. In 1773 he sailed again for Europe in company with Dr. Ewing to solicit aid for an academy at Newark, Del. As he was present in Boston at the destruction of the tea, he was summoned before the privy council to give an account of that transaction, and warned the council of the effect of a persistence in the measures they were enforcing. He spent some time on the continent, and after the declaration of independence returned home, bringing important papers and narrowly escaping capture. In 1777 he went to Charleston, S. C., and engaged in some mercantile speculations with a younger brother. He afterward practised medicine at Edenton, N. C., was a surgeon in the revolutionary army (1778–'81), represented Edenton in congress (1784–'7), was one of the members of the convention that framed the federal constitution (1787), and from 1790 to 1792 again a member of congress. At the close of his last term he removed to New York city, where he devoted himself to literary pursuits. He was a frequent contributor to the transactions of the learned societies of Europe and America, and in 1814 was associated with De Witt Clinton in the organization of the literary and philosophical society of New York. He published "A Discourse on the Benefits of Civil History" (New York, 1810); "Observations on the Climate of America" (1811); and "History of North Carolina" (2 vols. 8vo., 1812).

WILLIAMSPORT, the shire town of Lycoming co., Penn., on the left bank of the West branch of the Susquehanna river, between Lycoming and Pine creeks; pop. in 1860, 7,561. The lumber business gives employment to a large proportion of the inhabitants, and is their chief source of wealth. There are 25 saw mills (18 running by steam and 7 by water), 3 railroad machine shops, 4 planing mills, an iron furnace, a woollen factory, a flouring mill, a soap and candle factory, 3 tanneries, an academy, 2 female seminaries, 3 newspaper offices, and 10 churches, viz.: 2 Presbyterian, and 1 each African, Albright, Baptist, Episcopal, German Reformed, Lutheran, Methodist, and Roman Catholic. The West branch canal passes through the town, and the Philadelphia and Erie, Williamsport and Elmira, and Catawissa and Williamsport railroads intersect at this point.

WILLIBROD. See WILBRORD.

WILLIS, FRANCIS, M.D., an English clergyman and physician, born in Lincolnshire about 1718, died at Greatford, Lincolnshire, Dec. 5, 1807. He was educated at Brasenose college, Oxford, took orders in 1740, and was appointed to the living of Greatford in Lincolnshire, where he opened an asylum for the insane. Afterward he obtained the degree of M.D. from Oxford. He had charge of George III. during his earlier attacks of insanity, and received for his services a pension of £1,500 for 21 years. For curing the queen of Portugal of a similar disorder he received £20,000. His mode of treatment is not fully known, but it is said that he possessed great power of fascination over his patients.—His son, Dr. Robert Darling Willis, who had charge of the asylum at Greatford, attended George III. in his later paroxysms of insanity.

WILLIS, NATHANIEL PARKER, an American author, born in Portland, Me., Jan. 20, 1807. His grandfather and father, both of whom were named Nathaniel Willis, were well known publishers, the former having been an apprentice in the same printing office with Benjamin Franklin and a member of the so called Boston "tea party;" and the latter one of the founders in 1816 of the "Boston Recorder," the first religious newspaper ever permanently established. The family removed to Boston when young Willis was about 6 years of age, and at the Latin school of that city and the Phillips academy at Andover he received his preliminary education. He was graduated at Yale college in 1827. During his collegiate career he published under the signature of "Roy" a series of "Scripture Sketches" in verse, and a few other poems, which obtained for him some reputation, beside gaining a $50 prize for a poem, offered by the publisher of an illustrated annual; and immediately after graduating he was employed by Samuel G. Goodrich (Peter Parley) to edit "The Legendary" and "The Token." In 1828 he established the "American Monthly Magazine," in which several writers since distinguished published their first literary efforts, although the most numerous and characteristic articles were contributed by his own pen. At the expiration of 2½ years this periodical was merged in the "New York Mirror," a weekly literary journal published by George P. Morris; and soon after Mr. Willis set out upon a tour of travel in the old world, of which his "Pencillings by the Way," contributed to the "Mirror," afforded a lively and picturesque record. Upon arriving in Paris he was appointed by the American minister, Mr. Rives, one of his attachés, in which capacity he gained access to the most polished circles of the European capitals which he visited. Having travelled through France, Italy, and Greece, and in parts of Asia Minor and European Turkey, he went finally to England, where in 1835 he was married to a daughter of Gen. Stace, commanding at the Woolwich arsenal. In the same year he published in 3 volumes a collection of his "Pencillings by the Way," which, on account of their alleged freedom of personal detail, were severely criticized by the "Quarterly Review" and other periodicals. For some remarks respecting the quality of Marryat's novels and the class of readers who chiefly perused them, he was insultingly replied to by that author, whom he called to account, and with whom he had a hostile meeting at Chatham. He also published in England "Inklings of Adventure" (3 vols., London), a series of tales and sketches which originally appeared in the "New Monthly Magazine" under the pseudonyme of Philip Slingsby, and which, like the "Pencillings by the Way," were republished in America and proved popular in both countries. In 1837 he returned home, and retired to "Glenmary," a small estate, situated in a picturesque bend of the Susquehanna river, near Owego, N. Y., where for two years he devoted himself chiefly to rural occupations. In 1839 he became one of the editors of the "Corsair," a literary gazette published in New York; and in the autumn of that year he revisited England, where in 1840 appeared his "Letters from under a Bridge," written during his residence at Glenmary, and which was followed by "Loiterings of Travel," a miscellany of stories, poems, and European letters, and two dramas, "Tortesa the Usurer" and "Bianca Visconti," published together under the title of "Two Ways of Dying for a Husband." About this time also he wrote the letterpress for W. H. Bartlett's views of the scenery of the United States and Canada, and issued an illustrated edition of his poems. Returning to America, he established in New York in 1844, in connection with his former associate, Mr. Morris, a daily newspaper called the "Evening Mirror;" but the death of his wife soon after and his own failing health induced him to return to Europe. During this visit he published a collection of magazine articles under the title of "Dashes at Life with a Free Pencil" (3 vols., London, 1845). Upon returning to New York in 1846, he published a complete edition of his works in one thick octavo volume, and in the same year he was married for the second time, to a daughter of the Hon. Joseph Grinnell of New Bedford. He again entered into a literary partnership with Mr. Morris, which resulted in the establishment of the "Home Journal," a weekly journal to which the two editors are still regular and frequent contributors. His remaining works comprise "Rural Letters and other Records of Thought and Leisure" (1849); "People I have Met" (1850); "Life Here and There" (1850); "Hurry-Graphs" (1851); "Memoranda of a Life of Jenny Lind" (1851); "Fun Jottings, or Laughs I have taken a Pen to" (1853); "A Health Trip to the Tropics" (1853); "A Summer Cruise in the Mediterranean in a United States Frigate" (1853); "Famous Persons and Places" (1854); "Out-Doors at Idlewild" (1854); "The

Rag Bag" (1855); "Paul Fane, or Parts of a Life else Untold" (1856); and the "Convalescent" (1860). They have in general the discursive and fragmentary character of his earlier works, being for the most part a record of the author's impressions of travel or sketches of the lights and shadows which flit over the surface of society. The style is singularly sprightly and graceful, often curiously quaint, and no American author has exhibited more constructive skill or a nicer choice of words. Mr. Willis has for a number of years resided at Idlewild, an elegant country seat on the Hudson river near Newburg, N. Y.

WILLIS, Robert, an English clergyman and professor, born in London in 1800. He was graduated at Caius college, Cambridge, in 1826, gained a fellowship, became a fellow of the Cambridge philosophical society while yet an undergraduate, and was elected a fellow of the royal society in 1830. In 1837 he was appointed Jacksonian professor of natural and experimental philosophy in the university of Cambridge. His studies have extended to the entire range of applied mathematics, and its allied subjects, including acoustics and the physics of oral language, the philosophy of mechanics and machinery, and ancient architecture, especially ecclesiastical. He is an honorary member of the institution of civil engineers, and of the royal institute of British architects; and on the organization of the archæological institute in 1843, he became one of its most ardent supporters. He has published numerous important works on architectural and mediæval subjects.

WILLIS, Thomas, an English physician, born at Great Bedwin, Wiltshire, Jan. 27, 1621, died in London, Nov. 11, 1675. He was graduated at Christchurch college, Oxford, in 1639, soon after took up arms in defence of Charles I., subsequently turned his attention to medicine, and at the restoration was appointed Sedleian professor of natural philosophy in the university of Oxford. In his "Anatomy of the Brain" (4to., 1664) he first showed that the brain was a congeries of organs, and the seat of moral and intellectual action. In 1666 he went to London, and was immediately appointed physician in ordinary to the king. Here he became one of the founders of the royal society, in its origin little more than a revival of a similar club with which he had been connected in Oxford, and published in 1667 a treatise on the "Pathology of the Brain and Nervous System," in which he gave a new and, as is now admitted, the true explanation of the phenomena presented in the spasmodic diseases hysteria, chorea, &c. His other works are valuable. He was regarded as the most elegant Latin writer of his time.

WILLISTON, Samuel, an American philanthropist, born in Easthampton, Mass., in 1793. He commenced the study of theology, which he was obliged to relinquish from weakness of the eyes, and, engaging in business, acquired a large fortune in the manufacture of buttons. In 1840 he established in his native town the "Williston seminary," on which he has expended for lands, buildings, and endowment $85,000. In 1846 he endowed two professorships and one half of a third in Amherst college, giving for this purpose $50,000, to which he added in 1858 and 1859 further sums making the whole amount about $75,000. He has 3 times erected a church at Easthampton, repeatedly burned, and has also been a liberal benefactor to the Mt. Holyoke female seminary.

WILLOUGHBY, Sir Hugh, an English explorer, born at Risby, Derbyshire, perished either at sea or on some portion of the arctic coast in the north of Finmark about Jan. 1554. In 1553 he was selected to command an expedition fitted out by the merchants of London, and invested with the authority of admiral of the fleet. The expedition consisted of 3 vessels: the Bona Speranza, of 120 tons, Sir Hugh's ship; the Edward Bonaventura, of 160 tons; and the Bona Confidentia, of 90 tons; the whole carrying 136 persons, of whom 18 were merchants concerned in the venture. It was destined "for the discovery of regions, dominions, islands, and places unknown," but forming a part of the country claimed under Sebastian Cabot's discoveries. It sailed from Deptford May 10, 1553, but on July 30 the vessels were scattered by a storm. They were detained on the coast for two months, and the Bona Speranza and Bona Confidentia put into the harbor of Arzina in Lapland, where the crews and passengers all perished from cold and starvation. A few of the seamen of the Bonaventura, which was wrecked, subsequently reached Archangel. Repeated expeditions were sent in search of these ships, but they brought meagre information of them, though a will of Gabriel Willoughby, a kinsman of Sir Hugh, attested by the latter as witness, was obtained from the Russians some years later, dated in Jan. 1554.

WILLOW, the ordinary name of shrubs and trees of the genus *salix*, varying in height from 2 or 3 inches to 50 or even 90 feet. They belong to the natural order *salicaceæ*, along with the poplars, from which they differ generically in their floral structure. The flower consists of an entire bract enclosing, in the barren aments, from 1 to 5 stamens (a few species having more), and one or more glands situated near them; but in the fertile aments it encloses a stalked or nearly sessile pistil and its accompanying glands. The willows are noted for rapidity of growth, flexile and spreading branches, and simple, undivided, petioled, deciduous leaves, having variously sized and different formed stipules which fall off. The leaves are spirally arranged in series of 3, 4, 6, &c., a few species only having them placed opposite to each other. The bark of the young shoots abounds in a bitter principle known as salicine, employed medicinally as a substitute for quinine with marked success. Baskets, wickerwork, props for vines, bridles, ropes, cloth, and a variety of other articles, are made from different parts of the tree; the timber is also of much value for a great many purposes, and its charcoal useful in the manufacture of gunpowder and for painters' crayons. The leaves and twigs occasionally serve for food to domestic animals, and in Lapland and Norway the inner bark is ground and mixed with oatmeal in seasons of scarcity. The down of the seeds is employed as a substitute for cotton in stuffing cushions, mattresses, and dresses, and a coarse paper has been made from it. Some species of the willow are remarkable for beauty of contour, spread of top, brightness of the younger limbs, or sweetness of the blossoms. Planted near streams or on the margins of causeways and wet roads, their roots extend widely and serve admirably in binding together the earth and resisting the ravages of floods. The ancients seem to have been familiar with the various uses of the willow, they being mentioned by Herodotus and by several Latin writers. The weeping willow, a native of the banks of the Euphrates, is connected with sacred history. —As a genus, the *salices* are exceedingly difficult of study, so liable are they to variations produced by climate, soil, or cultivation. Accordingly, botanists disagree in regard to the actual number of species known. Only the strictest comparison of individual growing plants collected in gardens or willow grounds, called salicetums, and observations made on them in every condition of their growth from the seedling to the mature shrub or tree, could be satisfactory or conclusive. Thus, differences in the shape of the leaves, whether they are more or less serrated, the presence or absence of stipules, and such considerations, insisted on by some writers, would prove defective because these particulars may be dependent on the locality, which is true also of the times, whether later or earlier, of the pushing of the aments or flowers.—The *salices* have been carefully studied by such botanists as Sir James Edward Smith and William Borrer in England, Wahlenberg in Norway, Host of Vienna, Fries in Sweden, and Koch of Erlangen, author of a valuable pamphlet entitled *Commentatio de Salicibus Europæis* (Erlangen, 1828). The total number of European species, in Koch's opinion, does not exceed 50, though it had been asserted that there were more than twice that number. His divisions are founded on the plan suggested by Fries, arranging the species into natural groups as indicated by the position and character of the flower branches or catkins. Much importance is also laid on the relative length of the pedicel of the capsule to the gland which is always present, minutiæ noticed by Wahlenberg.—In the United States the willows have been elaborated by Dr. J. Barratt of Middletown, Conn., in his *Salices Americanæ* (4to., 1840); by John Carey in Gray's "Manual of the Botany of the Northern United States;" and later by N. J. Andersson, professor of botany in the university of Stockholm, Sweden ("Proceedings of the American Academy of Arts and Sciences," Boston, 1858). Mr. G. B. Emerson, in his "Report on the Trees, &c., of Massachusetts," gives Dr. Barratt's arrangement, though not always agreeing with him in his conclusions. According to Prof. Andersson, the number of American species is 59, which are classified into 5 groups: 1, those common to the old and new world; 2, those which may be considered as sub-species of the European; 3, those which are distinct species, but represent European types; 4, those which, though representing the types of the old world, yet have more marked specific differences; and 5, those which form peculiarly American types. Of species growing in North America, 12 are identical with those of Europe, some being naturalized or imported for cultivation; 6 are nearly identical, 6 are very analogous, and 15 very distinct, but of European types; 9 are almost peculiar to America, and 10 are quite peculiar. Beside these, Nuttall, in his appendix to Michaux's "North American Sylva," has added about 10 species from Oregon and the Rocky mountains, making the representation of the genus larger than in Europe. A few of the more prominent will be here mentioned. The black willow (*salix nigra*, Marshall) is a tree 13 to 25 feet high, with a rough black bark, its leaves narrowly lanceolate and pointed, tapering at each end, serrate, smooth, and green on both sides; stipules small, deciduous; glands of the sterile flowers 2, large and deeply 2 or 3 cleft; stamens 4 to 6, often but 3 in the upper scales. It is found along the banks of large rivers, and its branches are esteemed in basket work. The roots afford an intensely bitter decoction, reputed to be a remedy in intermittent fevers. The shining willow (*S. lucida*, Muhlenberg) is a small bushy tree, with rich dark green foliage; the leaves ovate oblong, serrate, shining on both sides, stipules oblong toothed, stamens 5; narrower and broader leaved varieties are specified. It is analogous to the *S. pentandra* of Europe. The white willow (*S. alba*, Linn.) is a large tree, 50 to 80 feet high, and is much cultivated for its shade, having been introduced from abroad for the purpose. Of similar qualities is the brittle or crack willow (*S. fragilis*, Linn.), tall and handsome, with smooth polished branches. The long-leaved willow (*S. longifolia*, Muhl.) has very long, linear lanceolate leaves, tapering at each end and nearly sessile, ovary stalked and hairy, stamens 2; a small tree from 2 to 12 feet high, the stem often prostrate and rooting extensively on sandy river banks. The silky-headed willow (*S. ceriocephala*, Michaux) is a very variable species, growing in swamps, and conspicuous for its very densely woolly catkins, which protrude themselves in April. The hoary willow (*S. candida*, Willdenow) is a shrub 2 to 5 feet high, and in exposed situations of a very white aspect, but greener in the shade; its leaves narrow, lanceolate, taper-pointed; aments oblong, cylindrical. It occurs in bogs from New York and New Jersey to Wisconsin and westward. The American sallow willow (*S. capreoides*, Andersson) is from California and Oregon, and represents the great round-leaved sallow of Europe, scarcely any essential difference existing in the parts of fructification. The smooth mountain willow (*S. phylicifolia*, Linn.) is a low-spreading shrub, with leaves of a coriaceous texture when old, and occurring in moist ravines on the alpine summits of the White mountains in New Hampshire; and Cutler's willow (*S. Cutleri*, Tuckerman) is a very small prostrate shrub, with elliptical and pointed, or obovate and obtuse leaves, slightly toothed and strongly veined, and found in similar situations; while a very small herb-like species, occurring in high latitudes and on alpine heights, is the *S. herbacea* of Linnæus, the stems seldom rising above an inch or two from the ground. —For ornamental planting a few of the willows are well adapted, such particularly as are of great size, and the weeping willow is well known for its extreme beauty. In gardens the variety known as the ring willow is much admired, while the catkins of the purple willow are very ornamental, as well as the elegant slenderness of its twigs. The shining willow (*S. lucida*), and its co-species the laurel-leaved (*S. pentandra*), produce a fine effect in shrubberies or when planted out singly in appropriate spots. The *salices* are better known abroad by certain artificial distinctions, and specified when low shrubs and small trees as sallows, when with long pliant branches and lanceolate leaves as osiers (see BASKET), and as true willows when they are large trees.

WILLUGHBY, FRANCIS, an English naturalist, born at Wollaton, Nottinghamshire, in 1635, died there, July 3, 1672. He was graduated at Trinity college, Cambridge, in 1656, and while there was the pupil of John Ray, with whom he afterward travelled through France, Spain, Italy, Germany, and the Low Countries, Ray examining the plants and Willughby the animals of each country. After Willughby's death his works were published by Ray, his "Ornithology" appearing in 1676 (1 vol. folio), and his "Ichthyology" in 1686 (1 vol. folio). They are of great value even yet for their accurate descriptions of species.

WILMINGTON, a city and port of entry of New Castle co., Del., situated on Christiana creek, just above its junction with the Brandywine, 2 m. from the Delaware river, and 28 m. S. W. from Philadelphia, on the Philadelphia, Wilmington, and Baltimore, and the Delaware, New Castle, and Wilmington railroads; pop. in 1860, 21,258. The city lies between the Christiana and the Brandywine, and its upper portion occupies the slope of a hill which rises about 110 feet above the tide level, commanding a fine view of the Delaware river and the adjacent country. It is regularly laid out, and has 26 churches, a town hall, a large hospital in the N. W. part of the city, and a Roman Catholic college (St. Mary's). There are 4 banks, with an aggregate capital of $700,000, a savings institution, and 6 newspapers. The streets are lighted with gas, and supplied with water of excellent quality from the Brandywine. It is the largest town in the state, and has extensive manufactures, especially of steam engines, railway cars and wheels, iron steamboats, locomotive and car springs, mill machinery, galvanized roofing, and other iron, cotton, and woollen goods, gunpowder, flour, carriages, and farming implements. The powder mills of Du Pont and co. are 2 m. from the city. There are 9 flouring mills on the Brandywine, in the immediate vicinity of Wilmington. The shipping of the district, June 30, 1861, amounted to 4,963 tons registered and 5,255 tons enrolled and licensed. During the year, 7 schooners, 1 sloop, and 6 steamers, measuring in all 2,932 tons, were built in the district.—The town was founded by Thomas Willing about 1732, and received from him the name of Willing Town, afterward changed to Wilmington. It obtained a city charter in 1832.

WILMINGTON, a city, port of entry, and the capital of New Hanover co., N. C., situated on the left bank of the N. E. branch of Cape Fear river, at its junction with the estuary of that river, 34 m. from the sea and 135 m. S. E. from Raleigh; pop. in 1860, 9,553. It is the largest and principal commercial town of the state, and is the terminus of the Wilmington and Weldon and Wilmington and Manchester railroads, connecting with other lines N. and S. The city contains 4 banks with an aggregate capital of $1,150,000, and has 2 newspapers, 5 steam saw mills, and 5 planing mills, with a capital of $150,000, producing annually about 25 million feet of lumber; 2 rice mills, 5 turpentine distilleries, working 25 stills with a capital of $100,000, several machine shops, &c. The tonnage of the district for the year ending June 30, 1861, was 14,511 tons registered, and 10,394 enrolled and licensed. The entries from foreign ports during that year were 41 American and 21 foreign vessels, tonnage 12,491, and the clearances 80 American and 28 foreign vessels, tonnage 23,128. The principal exports are timber, turpentine, rosin, tar, pitch, shingles, and cotton; the value of foreign exports in 1860 was $650,092, and in 1861 $332,292.

WILMOT, DAVID, an American jurist and statesman, born at Bethany, Wayne co., Penn., Jan. 20, 1814. He received his early education at Bethany and at Aurora, N. Y., studied law, and in 1834 was admitted to the bar at Wilkesbarre, and commenced the practice at Towanda, Bradford co., Penn., at which place he has resided ever since. During the presidential canvass of 1836 he supported Van Buren with so much ability as to attract the attention of his party. In 1844 he was elected to congress by the district composed of Bradford, Tioga, and Susquehanna counties. He alone of the Pennsylvania delegation in congress voted for the tariff act of

1846. On Aug. 8, 1846, pending the consideration of a bill placing $2,000,000 at the disposal of President Polk to negotiate a peace with Mexico, Mr. Wilmot offered the following amendment: "Provided, that, as an express and fundamental condition to the acquisition of any territory from the republic of Mexico by the United States, by virtue of any treaty which may be negotiated between them, and to the use by the executive of the moneys herein appropriated, neither slavery nor involuntary servitude shall ever exist in any part of said territory, except for crime, whereof the party shall first be duly convicted." This was the famous "Wilmot proviso," which became the source of great agitation throughout the country. It was adopted in the house by a vote of 94 to 78, only two northern men, Messrs. Douglas and McClernand of Illinois, voting against it. It was brought up in the senate on the following Monday (Aug. 10), and was under debate in that body when the hour arrived previously fixed for the adjournment of the session. At the next session, Mr. Wilmot again introduced it, and a fierce and angry contest commenced. The house remained firm in favor of the amendment, and it was passed by a decided majority, but not acted upon by the senate. Mr. Wilmot had been reëlected to congress in 1846, and was again chosen in 1848, in which year he supported Mr. Van Buren, the candidate of the free soil party, for the presidency. In 1850 he was nominated by that part of the democracy of his district opposed to the extension of slavery, while the other wing of the party put forward Mr. Lowery. A few days before the election both candidates withdrew in favor of Galusha A. Grow, formerly a law partner of Wilmot, who was elected, and has ever since represented that district in congress. In 1851 Mr. Wilmot was elected president judge of the judicial district composed of Bradford, Susquehanna, and Sullivan counties. In 1852 he supported Gen. Pierce for the presidency. During the struggle on the Kansas-Nebraska bill repealing the Missouri compromise, in 1854, he took ground against the measure. He was a delegate at large in the national republican convention which met in Philadelphia in 1856, and received a number of votes for the vice-presidential nomination. He was chairman of the committee which drew up the platform, and took a prominent part in the canvass which followed. In 1857 he was the republican candidate for governor of Pennsylvania. Upon receiving the nomination he resigned his place on the bench, and canvassed the entire state, but was defeated by a large majority. In December of that year Gov. Pollock appointed him president judge of his old district to fill a vacancy, and in the fall elections of the next year he was again chosen to that place by the people. He was a delegate at large to the Chicago convention in 1860, and was temporary chairman of that body. In March, 1861, he was elected U. S. senator to fill the vacancy occasioned by the resignation of Mr. Cameron. He has advocated the most vigorous prosecution of the war with the southern confederacy, and voted for the confiscation of the property of rebels.

WILMOT, John. See Rochester.

WILNA, or Vilna (Pol. *Wilno*), a W. government of Russia, in the former great principality of Lithuania, bounded N. W. and N. by Kovno, Courland, and Vitebsk, E. and S. E. by Vitebsk and Minsk, S. and S. W. by Grodno, and W. by Augustowo; area, 16,320 sq. m.; pop. in 1858, 781,741. The surface is generally flat, the most elevated part being less than 300 feet above the level of the sea. The most important rivers are the Niemen or Memel, and its tributaries the Vilia and Dubitza. Iron ore is the most valuable mineral production; some amber is found on the coast. The climate is severe in winter, but in summer it is warm and damp. A great deal of the surface is covered with forests, and much of it is occupied by moors and morasses. The soil is generally sandy, and different kinds of grain, hemp, and flax are grown. In favorable seasons some grain is exported. The manufactures and trade are both limited and of little importance.—Wilna, the capital, is situated at the junction of the Vilia and Vileika, 415 m. S. W. from St. Petersburg; pop. in 1858, 51,154, of whom a large proportion are Jews. It stands upon several low hills, and consists of a walled town and two extensive suburbs. The streets are narrow and crooked, and most of the houses of wood. It has a cathedral and several churches, one of which is built of marble, a Mohammedan mosque, 4 synagogues, and numerous religious, scientific, and charitable institutions. The manufactures are not very important, but a considerable trade is carried on in agricultural produce, which is exported to Riga, Memel, Königsberg, and Libau. Wilna was founded in 1322, and made the capital of Lithuania. In the 16th century it is said to have contained 100,000 inhabitants. Its university was suppressed in 1832.

WILSON. I. A new N. E. co. of N. C., drained by the Mackason river; area, about 700 sq. m.; pop. in 1860, 9,720, of whom 3,496 were slaves. The surface is undulating or hilly, and the soil fertile. The county is intersected by the Wilmington and Weldon railroad. Capital, Wilson. II. A N. co. of Tenn., bounded N. by the Cumberland river; area, 430 sq. m.; pop. in 1860, 26,072, of whom 7,964 were slaves. The surface is moderately hilly and the soil extremely fertile. The productions in 1850 were 55,774 bushels of wheat, 1,543,869 of Indian corn, 210,172 of oats, 253,259 lbs. of butter, 51,813 of wool, 1,237,305 of tobacco, and 63 bales of cotton. There were 18 grist mills, 12 saw mills, 45 churches, 2 newspaper offices, and 3,452 pupils attending public schools. Capital, Lebanon. III. A S. E. co. of Kansas, bordering on the Indian territory, and drained by the Verdigris river; area, 800 sq. m.; pop. in 1860, 27.

WILSON, Alexander, an American ornithologist, born in Paisley, Scotland, July 6, 1766, died in Philadelphia, Aug. 23, 1813. He was the son of a distiller, and in his 13th year was bound apprentice to his brother-in-law, William Duncan, to learn the trade of a weaver. He remained at this trade 7 years, and during this period composed verses for the "Glasgow Advertiser," and ventured upon the publication of a volume of his poems, which brought him neither profit nor honor. He was not discouraged, but, with a peddler's pack in one hand and a volume of verses in the other, travelled about the country, and went to Edinburgh to take part in a discussion in a debating society whether Fergusson or Allan Ramsay had done most honor to Scottish poetry, and recited before the meeting a poem called the "Laurel Disputed," in which he appeared as champion for the claims of the former. He also wrote at times for the "Bee," a periodical conducted by Dr. Anderson, and gained an acquaintance with Burns. About this time, having written some lampoons upon a resident of Paisley, he was prosecuted for libel, sentenced to a short imprisonment, and compelled to burn his production at the public cross of Paisley with his own hand. Resolving to emigrate to America, he sailed from Belfast, and arrived at New Castle, Del., July 14, 1794, with only a few borrowed shillings, without an acquaintance, and with no decided purpose. He first went to Philadelphia, and was employed by a copperplate printer, then resumed his old trade of weaving at Pennypack creek, a few miles from the city, but soon removed to Shepherdstown, Va., and afterward went on a peddling tour through New Jersey. It appears to have been during this journey that he first paid minute attention to the habits and appearance of birds. Finishing his tour, he became the teacher of a village school near Frankford, Penn., but shortly afterward removed to Milestown, where he remained several years. While here he paid a visit to his nephew, William Duncan, at his residence in Ovid, N. Y., occupying with his expedition there and back 28 days, during which he walked 800 miles. Afterward he removed from Milestown to Bloomfield, N. J., and from the last named place to Kingsessing on the Schuylkill, where he taught a union school. Here he began his career as an ornithologist. His home was near the botanical garden of William Bartram, who was well acquainted with birds. From him Wilson derived much information on the subject, and he resolved to form a collection of the finest American birds—apparently a visionary and stupendous undertaking for a man knowing only the names of a few species, with but few books, and with bad health. In Oct. 1804, he set out on his first excursion, in which he went as far as Niagara falls, through the then unopened wilderness of western New York. He published a metrical account of this journey in the "Port Folio," under the title of "The Foresters, a Poem." In 1805 he began to learn the art of etching under the instruction of Mr. Lawson, who had previously taught him drawing. He applied to President Jefferson for permission to accompany a government exploring party to the valley of the Mississippi, but got no answer. Bradford, a Philadelphia publisher, now employed him to assist in preparing an American edition of "Rees's Cyclopædia." In this situation he became acquainted with scientific men, and prevailed upon Bradford to furnish the funds for the publication of an American ornithology on an adequate scale. In Sept. 1808, the first volume of his great work on American birds appeared, but it was too expensive to be very successful. In the latter part of September he set out on a tour through the eastern states to procure subscribers, and returned, after a long, fatiguing, and expensive journey, with 41 names. Remaining at home a few days, he started on a similar tour through the South, where his success was no greater. In Jan. 1810, his second volume appeared. Sailing down the Ohio in a small boat as far as Louisville, he set out from Nashville for New Orleans in May, 1811, to travel on horseback through an unsettled and almost unknown country, and on June 6 reached his destination, whence he sailed for New York, and arriving at Philadelphia in August, began the preparation of the 3d volume of his work. In Sept. 1812, he started out again on another tour to the eastern states. At Haverhill, N. H., his exploring habits were noticed, and he was arrested on the charge of being a British spy examining the country to determine the best course for a body of troops to make their way from Canada into New England. On his return he employed himself unceasingly in the preparation of his work, and by laboring night and day he impaired his already weakened constitution and hastened his death. He completed the publication of 7 volumes, and the 8th and 9th were edited after his death, with a biography, by George Ord, who had been his companion in some of his journeys. The work was afterward continued by Charles Lucien Bonaparte (4 vols. 4to., Philadelphia, 1825-'33).

WILSON, Daniel, an English prelate, born in London, July 2, 1778, died in Calcutta, Jan. 2, 1858. At the age of 14 he was apprenticed to his uncle, a silk manufacturer, but in 1798, having resolved to take orders, entered St. Edmund's hall, Oxford. He was ordained deacon in 1801, and in 1802 became a curate of Mr. Cecil. In 1803 his essay on "Common Sense" received the Oxford English essay prize. He became assistant tutor of St. Edmund's hall in 1804, and from 1807 to 1812 was sole tutor and vice-principal, and also curate of Worton. In 1812 he left Oxford for St. John's chapel, Bedford row, London, and in 1824 received the vicarage of Islington. In 1832 he was appointed bishop of Calcutta and metropolitan of India. Bishop Wilson's principal works are: "The Christian's Struggle against Sin and Death," "Lectures on Christian Character," "Lectures on the Epistle to the Colossians," "Lectures on the Evidences of Christianity," "Sermons in India," "Sermons on Christian Doctrine," "Sermons on the Lord's Day," and "Sufficiency of Scripture as a Rule of Faith." His life has been written by the Rev. Josiah Bateman (2 vols., London, 1860).

WILSON, Florence (Lat. *Florentius Volusenus*), a Scottish scholar, born at Elgin about 1500, died in Vienne, France, in 1547. He was educated at Aberdeen, was tutor to the nephew of Cardinal Wolsey in Paris, was in the service of Cardinal du Bellay, and in 1535 became master of a school at Carpentras. He wrote *De Animi Tranquillitate Dialogus* (Lyons, 1543; Edinburgh, 1707 and 1751).

WILSON, George, M.D., a Scottish chemist, born in Edinburgh in 1818. He studied chemistry in the laboratories of Prof. Christison at Edinburgh and Prof. Graham at University college, London, became a member of the college of surgeons at Edinburgh in 1837, and of the college of physicians in 1839, and in 1840 began to lecture on chemistry in the extra-academical school of Edinburgh. In 1845 he was appointed chemical lecturer in the school of arts and the veterinary college of Edinburgh, in 1855 director of the industrial museum of Scotland, and soon after regius professor of technology in the university of that city. His principal works are: "An Elementary Treatise on Chemistry" (London, 1853), "Researches on Color-Blindness," "The Five Gateways of Knowledge," &c. His miscellaneous writings were collected and published under the title of *Religio Chemici* (London, 1862). His life was written by his sister (London, 1861).

WILSON, Henry, an American statesman, born at Farmington, N. H., Feb. 16, 1812. His parents being extremely poor, he was apprenticed at 10 years of age to a farmer in his native town, with whom he continued 11 years, during which period he was sent to school at irregular intervals, amounting in all to about 12 months. He early formed a taste for reading, and from a private library in the neighborhood borrowed and read on Sundays and in the evening by firelight and moonlight, in the course of his apprenticeship, nearly 1,000 volumes, chiefly of history and biography. On attaining his majority he quitted Farmington, and with all his possessions in a pack on his back walked to Natick, Mass., where he hired himself to a shoemaker until he had learned his trade, at which he worked for two years, when, having accumulated some money, he returned to New Hampshire and studied for a while in the academies at Stafford, Wolfsborough, and Concord. His plan of education was cut short by the insolvency of the person to whom he had intrusted his savings, and he returned to Natick and resumed work as a shoemaker in 1838. In 1840 he took an active part in the presidential canvass, and made upward of 60 speeches in behalf of Gen. Harrison, the whig candidate. In the next 5 years he was 3 times elected a representative from Natick to the legislature, and twice a state senator from Middlesex co. In the legislature he was soon known as an active and zealous opponent of slavery, and in 1845 he was selected in conjunction with the poet Whittier to carry to Washington the great anti-slavery petition from Massachusetts against the annexation of Texas. In the same year he introduced in the legislature a resolution declaring the unalterable hostility of Massachusetts to the further extension and longer continuance of slavery in America, and her fixed determination to use all constitutional and legal means for its extinction. He supported this resolution in a speech, which was pronounced by the leading anti-slavery journals to be the fullest and most comprehensive on the slavery question that had yet been made in any legislative body in the country, and it was adopted in the house by 93 majority. He was a delegate to the whig national convention of 1848, and on the rejection of anti-slavery resolutions by the convention he withdrew from it and took a prominent part in organizing the free soil party. He purchased at this time the "Boston Republican," a daily newspaper, which he edited for two years. In 1849 he was chosen chairman of the free soil state committee of Massachusetts, a post which he actively filled for 4 years. In 1850 and again in 1851 he was chosen a state senator, and during both terms was president of the senate. In 1852 he was made president of the free soil national convention at Pittsburg, and chairman of the national committee of the party. In the same year he was the free soil candidate for congress in the 8th district of Massachusetts, where the majority against the free soilers exceeded 7,500, and failed of an election by only 93 votes. He was elected to the constitutional convention of 1853, not only by his own town of Natick, but by the town of Berlin, and took a prominent part in the deliberations of that body. In the same year he was the free soil candidate for governor, and was defeated. In 1855 he was elected to succeed Edward Everett in the U. S. senate, and shortly after taking his seat made a speech advocating the repeal of the fugitive slave law and the abolition of slavery in the District of Columbia and in the territories. He has ever since been conspicuous in the senate as an earnest advocate of anti-slavery measures. For a brief period in 1855 he was associated with the American party; but on the adoption of a pro-slavery platform by the national council of that party, he withdrew from it and took an active share in organizing the republican party on the basis of opposition to the extension of slavery. When, in May, 1856, Mr. Sumner, his colleague, was assailed by Mr. Brooks of South Carolina, Mr. Wilson in a speech to the senate denounced the act as a "brutal, murderous, and cowardly assault." For this he was challenged by Mr. Brooks, and declined to accept the challenge on the ground that duelling is a barbarous practice which the law of the country has branded as a crime, but stated at the same time that he believed in the right of self-defence in its broadest sense. During the four following years Mr. Wilson took part in all important debates in the senate, and made elaborate speeches, remarkable for fulness and accuracy of statement, on Kansas, the treasury note bill, the expenses of the government, the tariff, the Pacific railroad, and many other topics. His speech in defence of free labor, in reply to Senator Hammond of South Carolina, March, 1859, attained an immense circulation through the free states. In January of the same year the Massachusetts legislature reëlected him to the senate by nearly a unanimous vote. On the assembling of the senate in March, 1861, he was made chairman of the committee on military affairs, a post which the civil war rendered one of unprecedented labor and responsibility. In this capacity he introduced and carried through congress, during the extra session of 1861, the acts to authorize the employment of 500,000 volunteers, to increase the regular army, to reorganize the military system, and various others of nearly equal importance. It was said by Gen. Scott that he did more work in that short session than all the chairmen of the military committees had done for 20 years; and in a published letter, dated Jan. 27, 1862, Mr. Cameron, the secretary of war, says of him: "No man, in my opinion, in the whole country, has done more to aid the war department in preparing the mighty army now under arms." In the regular session of 1861-'2 Mr. Wilson introduced the bill abolishing slavery in the District of Columbia, and also the measure for abolishing the "black code."

WILSON, Horace Hayman, an English orientalist, born in London in 1786, died there, May 8, 1860. He received a medical education, and went to Calcutta in 1808 as assistant surgeon in the East India company's Bengal establishment, but immediately on his arrival was attached to the mint at Calcutta, of which he afterward became assay master and secretary. In 1812 he was elected secretary of the Asiatic society of Bengal, and in 1819 was appointed on the commission to remodel the Sanscrit college at Benares. He was also for many years secretary of the committee of public education, and in this office successfully opposed the effort to banish the native language and literature from the sphere of public education. In 1832 he was elected Boden professor of Sanscrit at Oxford, and after his arrival in England was appointed librarian at the East India house, and director of the royal Asiatic society. He published a "Sanscrit and English Dictionary" (Calcutta, 1819; 2d ed., enlarged, London, 1832); "History of British India from 1805 to 1835" (3 vols., London, 1846); "Specimens of the Theatre of the Hindus with Plays" (2 vols., Calcutta, 1826-'7; 2d ed., London, 1835), with translations and valuable disquisitions; "Sanscrit Grammar" (2d ed., London, 1847); beside translations of the *Megha Duta*, the *Sakuntala*, the *Vishnu Purana*, a great part of the *Rig Veda*, and other important works. He contributed extensively to the "Asiatic Researches" and the "Journal of the Asiatic Society," and made a Bengalee translation of Todd's edition of Johnson's English dictionary (2 vols., Calcutta, 1843).

WILSON, James, a signer of the declaration of independence, born near St. Andrew's, Scotland, in 1742, died in Edenton, N. C., Aug. 28, 1798. He studied at St. Andrew's, Edinburgh, and Glasgow, and in 1766 emigrated to Philadelphia, and obtained the place of usher in the college there. He subsequently studied law in the office of John Dickinson, was admitted to the bar, and soon acquired celebrity in his profession. He sat in the provincial convention of Pennsylvania in 1774, and in May, 1775, was chosen a member of the continental congress, to which he was repeatedly rechosen, though superseded from 1777 to 1782 through partisan opposition. Upon the commencement of hostilities he obtained a colonel's commission. In 1779 he was appointed advocate-general of France in the United States, charged among other duties with drawing up plans for regulating the commercial intercourse between the two nations, and held that office till 1782. He was a member of the convention that framed the federal constitution, and of the Pennsylvania convention that adopted it. Under the federal constitution, he was appointed by President Washington one of the first judges of the supreme court of the United States. In 1790 he was appointed the first professor of law in the college of Philadelphia, and filled the same chair when that college and the university of Pennsylvania were united in 1791.

WILSON, James, a Scottish naturalist and author, brother of Professor John Wilson, born in Paisley in 1795, died in May, 1856. He was an accomplished writer upon his favorite science, and a frequent contributor to "Blackwood's Magazine." He wrote the articles on natural history for the 7th edition of the "Encyclopædia Britannica," which would form 6 ordinary 8vo. volumes, and are distinguished by a peculiar grace of style. He also wrote "A Voyage round the Coasts of Scotland and the Isles," and "Illustrations of Scripture by an Animal Painter." He declined the chair of natural history in the university of Edinburgh, offered him in 1854. A memoir of him by Dr. Hamilton of London appeared in 1859.

WILSON, James, a British statesman, born at Hawick, June 3, 1805, died in Calcutta, Aug. 11, 1860. He was educated at the Friends' seminary in Hawick, went into business as a hatter, removed to London, lost his fortune by a speculation in indigo, and was released by his creditors, but afterward paid them in full. In 1839 he published a work against the corn laws, and in 1840 another ascribing to those laws the fluctuations in the currency. In 1843 he established the "Economist" weekly newspaper, in which he contributed very efficiently to the success of free trade in parliament. In July, 1847, he was elected to the house of commons from Westbury, and soon afterward became a secretary of the board of control, which office he held until Lord John Russell's administration went out in Feb. 1852. In the December following he became financial secretary for India under Lord Aberdeen, which office he retained until the resignation of the ministry in 1857. When Lord Palmerston again took office in 1859, Mr. Wilson was appointed vice-president of the board of trade. On Oct. 20, 1859, he was sent to India by the government to bring order into the finances of that country, and while actively engaged in his duties fell a victim to the climate.

WILSON, John, a Scottish author, born in Paisley, May 19, 1785, died in Edinburgh, April 3, 1854. He was the eldest son of a wealthy manufacturer of Paisley, and was placed at an early age under the charge of a clergyman living in the highlands, by whom he was encouraged to devote himself to vigorous out-of-door sports as well as to his regular studies. At 15 years of age he became a student in the university of Glasgow, whence in 1803 he went to Oxford, and became a gentleman commoner of Magdalen college. His career at the university was creditable to his talents, and he gained in 1803 the Newdigate prize of 50 guineas for an English poem of 50 lines "On the Study of Greek and Roman Architecture," which he did not consider of sufficient merit to be included among his collected poems, but which was warmly praised by Lockhart. He had the reputation of being a hard liver as well as a hard reader, and possessing naturally an exuberance of animal spirits and great physical strength and activity, he indulged perhaps unduly in social enjoyments and the rough pastimes frequently connected with them; was the boldest rider, the stoutest oarsman, and the most indefatigable walker among his contemporaries, and according to the common accounts frequently distinguished himself in the "gown and town" riots as the champion of the "gown." He was graduated B.A. in 1807, and soon afterward purchased a small estate called Elleray, romantically situated on Lake Windermere, in Westmoreland, and in the immediate vicinity of the residences of Wordsworth, Southey, and other distinguished literary men. Here, with the exception of occasional visits to Edinburgh, he lived a year or two as a country gentleman, passing whole days in his boat upon the lake, and indulging in a thousand wild vagaries and schemes of travel or adventure. His marriage in 1811 to a lady of great beauty and amiability, whom he is said to have wooed in the disguise of a footman, gave stability to his character and a purpose to his life; and in 1812, having previously attracted the favorable notice of Sir Walter Scott, Joanna Baillie, and others by an "Elegy on James Grahame," author of "The Sabbath," he published "The Isle of Palms," a poem of the lake school, abounding in glowing descriptions of tropical scenery, but for the most part deficient in energy and condensation. It gave the author a considerable reputation, and was greatly admired in its day, but, beyond a few passages occasionally included in commonplace books of poetry, it is now little read. In 1815 he was admitted to the Scottish bar, at which however his practice was only nominal, literature being the vocation most congenial to his tastes. In 1817 appeared his "City of the Plague," a dramatic poem of a higher and more masculine character than his previous production, but of which the subject, the great plague of London in 1665, was unwisely chosen, and evidently beyond the author's power to treat adequately, his strength lying in tender descriptive passages. In the same year was commenced "Blackwood's Magazine," a monthly periodical established in the tory interest for the purpose of driving whiggism out of Edinburgh and counteracting the influence of the "Edinburgh Review," which under the editorship of Jeffrey wielded a despotic authority in matters of opinion and literary criticism. Aided by contributors like Wilson, Lockhart, Hogg, Maginn, and other young men of talent, scholarship, and ambition, who were eager to assert their literary and political independence, and brought to the task an abundance of animal spirits and an utter indifference to the conventional courtesies and even decencies of political and personal intercourse, "Blackwood" rapidly gained in influence and reputation; and in the tales, sketches, discursive essays, and criticisms with which he enriched its pages, Wilson first made known the variety and depth of his powers, his extensive scholarship, his critical abilities, his close sympathy with what is noble and just, and his command of the humorous and pathetic springs of the human heart. In curious contrast with his occupation as a magazine writer, he came forward in 1820 as a candidate for the chair of moral philosophy in the university of Edinburgh, made vacant by the death of Dr. Thomas Brown. His profuse and careless style of living had so impaired his fortune, that a post of this kind became necessary as a means of support; and Scott and other influential friends succeeded in procuring his appointment, notwithstanding strong opposition from a party who believed that a man of Wilson's habits and tastes was not altogether a fit successor to Dugald Stewart and Brown. He however devoted himself with earnestness and conscientious fidelity to the duties of his office, and for the next 30 years lectured to large classes of pupils who hung with delight on his eloquent periods, and caught not a little of their master's enthusiasm. At the same time he prosecuted his literary labors with increased ardor, and in 1822 published his "Lights and Shadows of Scottish Life," a collection of tales illustrating

Scottish rural and pastoral life, which was followed by "The Trials of Margaret Lyndsay" (1823) and "The Foresters" (1824). They are eminently stories of a domestic character, and abound in descriptive passages of great beauty and pathos, but lack inventiveness, and the characters are pitched far above the average of Scottish rural and urban nature. But as the chief author of the "Noctes Ambrosianæ," contributed to "Blackwood" between 1822 and 1835, he acquired his greatest reputation; and his pseudonyme of "Christopher North," adopted in connection with these amusing papers, became almost as widely known as his own proper name. The earlier "Noctes" were remarkable chiefly for piquant but savage and vindictive personalities; but as Wilson became more and more identified with the authorship of them, they lost much of their acerbity without flagging in interest or spirit. They exhibit his varied powers to the best advantage, and form a unique collection of discursive essays, in which the familiar topics of the day are discussed with abundant humor, shrewdness, and ability. A complete edition, containing "Christopher in the Tent," contributed by Wilson to "Blackwood" in 1819, and which forms a prelude to the "Noctes," was published in New York by R. Shelton Mackenzie, with biographical notices and numerous notes (5 vols., 1857). In 1837 Professor Wilson sustained a severe loss in the death of his wife, in consequence of which books and lectures were for a while laid aside. Literature, however, had become indispensable to him, and he resumed work on the magazine, of which he was still the main support, though never, as was commonly believed, the editor. In 1841 he published an elaborate "Essay on the Genius and Character of Burns;" in 1842 "The Recreations of Christopher North," comprising selections from his contributions to "Blackwood;" and between June, 1849, and Sept. 1852, he wrote the series entitled "Dies Boreales, or Christopher under Canvas." In 1851 he was smitten with paralysis of both legs, and was obliged in consequence to resign his professorship in the university. The crown soon after granted him a literary pension of £300.—The striking personal appearance of Professor Wilson added much to the effect which his writings produced, and it has been said that no literary man ever possessed a more magnificent *physique.* Lockhart, in his "Peter's Letters to his Kinsfolk," describes him as "a very robust, athletic man, broad across the back, firm set upon his limbs, and having altogether very much of that sort of air which is inseparable from the consciousness of great bodily energies. In complexion he is the best specimen I have ever seen of the genuine or ideal Goth. His hair is of the true Sicambrian yellow; his eyes are of the lightest and at the same time of the clearest blue; and the blood flows in his cheek with as firm a fervor as it did, according to the description of Jornandes, in those of the *bello gaudentes, prœlio ridentes Teutones* of Attila. I have never seen a physiognomy which could pass with so much rapidity from the serious to the most ludicrous of effects. It is more eloquent, both in its gravity and in its levity, than almost any countenance I am acquainted with is in any one cast of expression." For 35 years his commanding figure and finely formed head, around which his hair flowed in waving locks, formed a marked feature in the circles of the Scottish metropolis. His works have been edited in 12 vols. by his son-in-law, Professor Ferrier; and a memoir from family papers, with a selection from his correspondence, is in preparation by his daughter, Mrs. Gordon (1862).

WILSON, Richard, an English painter, born in Pinegas, Montgomeryshire, in 1713, died in Llanverris (now called Loggerheads from a painting by him on a tavern signboard there), Denbighshire, in 1782. He was instructed by an obscure London painter named Wright, and for many years practised portrait painting in London with success. In 1749 he went to Italy for the purpose of studying the old masters, and discovered, it is said, by accident, a remarkable talent for landscape painting, which he was urged by Zuccarelli and others to cultivate exclusively. His studies were made directly from nature, and by avoiding the habit of copying the works of others, he acquired a bold and natural style, free from mannerisms. At Rome he had many pupils, and was held in such estimation that painters like Mengs and Joseph Vernet sought to acquire his pictures. Returning to London in 1755, he brought himself into notice as one of the first landscape painters of the age by his fine picture of "Niobe," now in the national gallery; and thenceforth for nearly 25 years he practised his art in London with a success wholly incommensurate with his merits. A few of his pictures were purchased by intelligent connoisseurs, but the greater part he was obliged to dispose of to the dealers at prices ridiculously small. Not a few were subsequently sold for 100 times as much as they brought him. This neglect was due in some measure to his roughness of manners and unaccommodating disposition, which rendered him unpopular with his brother artists, and caused men of far inferior abilities to be preferred to him. His works are tolerably numerous, and many of them have been admirably engraved by Woollett, Sharpe, and others. When he had painted a successful picture, he frequently repeated it several times with slight modifications, as in the case of his "Villa of Mæcenas at Tivoli," of which 5 repetitions are in existence, one being in the national gallery. He was one of the founders of the royal academy, and for a number of years its librarian.

WILSON, Sir Robert Thomas, an English general, born in London in 1777, died there, May 9, 1849. He was educated at Westminster and Winchester, in 1793 went to Flanders as a volunteer, and in the following year obtained a commission in the 15th dragoons. He served in Ireland during the rebellion (1798), and subsequently in Holland, Brazil, and at the Cape of Good Hope. On his return to England he was sent on a secret mission to the continent. In 1808 he raised and formed the Lusitanian legion in Portugal, and afterward commanded a Spanish brigade under Sir Arthur Wellesley, and was actively engaged in the battle of Talavera. From 1812 to 1814 he served as British military commissioner at the head-quarters of the allied armies, and was for some months in command of the Prussian reserve, with which he drove back the French at Lützen. He assisted in the escape of Count La Valette, who had been condemned to death for treason after the restoration of Louis XVIII.; and at a later date he drew down upon himself the hostility of the government by his open disapproval of the course pursued toward Queen Caroline. He was, in consequence, dismissed from the army and deprived of the numerous foreign orders and insignia which had been bestowed upon him. From 1818 to 1831 he was a member of the house of commons in the liberal interest. After the death of George IV. he was restored to his rank in the army, and in 1841 became a general. In 1842 he was appointed governor and commander-in-chief of Gibraltar, in which post he continued till just before his death. Gen. Wilson translated Regnier's "Campaign in 1801 in the East and in Egypt," and afterward wrote "An Historical Account of the British Expedition to Egypt." He also published "An Inquiry into the Military Force of the British Empire" (1804); "Campaigns in Poland, with Remarks on the Russian Army" (1811); and "A Sketch of the Military Power of Russia" (1817). His posthumous "Journals of the Russian Campaign against Napoleon" appeared in 1861 (4 vols., London).

WILSON, William Dexter, D.D., an American clergyman, born in Stoddard, N. H., Feb. 28, 1816. After spending a few months at the Walpole (N. H.) academy, he pursued his studies in private for several years, and in 1835 entered the theological department of Harvard university. Having become a member of the Protestant Episcopal church, he was ordained to the ministry in 1842, and soon afterward published a small book on "The Constitution of the Christian Church," enlarged and republished under the title of "A Manual of Church Principles" (Baltimore, 1846). In 1847 he edited Bishop Mant "On the Rubrics," with additional matter expounding the rubrics of the American church, and in 1848 published a "History of the Reformation in England." In 1848-'9 he wrote a series of essays under the title of "The Church Identified," which were afterward collected in a volume (Utica, N. Y.; enlarged ed., New York, 1850). He received the honorary degree of D.D. from Geneva college in 1849, and in 1850 was elected professor of history and moral and intellectual philosophy in the same institution. He has published an "Elementary Treatise on Logic" (12mo., New York, 1856), and has contributed to reviews many articles on philosophical subjects.

WILTSHIRE, or Wilts, a S. county of England, bounded N. and N. W. by the county of Gloucester, S. W. by Somerset, S. by Dorset and Southampton, E. by Southampton and Berks; area, 1,352 sq. m.; pop. in 1861, 249,455. It is almost quadrangular in form, and is divided by the Upper Avon and Kennet rivers and the canal which connects them into two nearly equal portions. The northern division is flat and composed of rich and fertile lands; the southern division is undulating and elevated, having some valleys and the considerable plateau of Salisbury plain, unenclosed and covered with a scanty herbage. The county is drained by the Thames and the Upper and Lower Avon. The principal towns are Salisbury, Trowbridge, Wilton, Devizes, Bradford, Chippenham, Warminster, Malmesbury, Westbury, Calne, and Marlborough. There are considerable tracts devoted to wheat, barley, and turnips, but the greater part of the surface is kept in pasturage, sheep being raised in the S. and cattle in the N. The manufactures include cutlery, steel goods, carpets, woollen goods, and silks. The county is traversed by the great western railway and several of its branches, and by a branch of the south coast railway, extending from Salisbury to Portsmouth. It is remarkable for the abundance of druidical remains, including Stonehenge and Avebury. Wiltshire returns 18 members to parliament, 2 for each of its divisions and 14 for boroughs.

WIMPFFEN-BERNEBURG, Felix, baron de, a French general, born in Deux Ponts, Germany, in 1745, died in 1814. He became distinguished in 1769 as the leader of a volunteer corps against Paoli in Corsica, and commanded a regiment at the siege of Gibraltar in 1782. In 1789 he was a deputy from Normandy to the French states-general, joined the party of the *tiers état*, and voted on Aug. 4 for the abrogation of aristocratic privileges. In 1792 he commanded at the defence of Thionville against the Prussians, and when offered a million to betray the town, answered that he would accept, if the offer were legally acknowledged before a notary. He declined the office of minister of war, took command of the army of the coast at Cherbourg, and on the fall of the Girondists revolted against the convention, was defeated near Vernon, and remained concealed at Bayeux till he escaped to England. After the 18th Brumaire he was made by the first consul a general of division, and subsequently inspector-general of the government establishments for breeding horses, which office he held till his death.

WINCHELL, James Manning, an American clergyman, born in North-East, Dutchess co., N. Y., Sept. 8, 1791, died in Boston, Feb. 22, 1820. He entered Union college in 1808, but was graduated at Brown university in 1812, was ordained as a Baptist minister in June, 1813, and in March, 1814, became pastor of the first Baptist church in Boston. He won a high reputation in Boston for his remarkable eloquence and the suavity and grace of his manners. During his residence there he edited in connection with Drs. Sharp and Baldwin the "American Baptist Magazine," published a "Historical Sketch of the First Baptist Church in Boston" (1819), and compiled a collection of psalms and hymns, known as "Winchell's Watts," and used by Baptist churches for many years.

WINCHESTER, a village and the capital of Frederic co., Va., 150 m. N. N. W. from Richmond, and 71 m. W. by N. from Washington; pop. in 1860, 4,392. A railroad 32 m. in length connects it with the Baltimore and Ohio railroad at Harper's Ferry. It is the principal town of the rich and fertile valley of the Shenandoah, and is laid out regularly, with wide and pleasant streets; the dwellings are mostly of brick and stone, and are supplied with excellent water brought in iron pipes from a spring half a mile distant. The town contains 12 churches, an academy, 2 banks with an aggregate capital of $680,000, and in 1860 had 2 newspapers. On March 12, 1862, Winchester was occupied by the federal troops under Gen. Banks, after an engagement with the confederates on the 11th. On the 23d a confederate force, under Gens. T. J. Jackson, Smith, and Longstreet, advanced upon the place, but were defeated by Gen. Shields. On May 25, during the retreat of Gen. Banks from Strasburg, there was an action of considerable severity at this place between his force and the confederate troops under Gen. Jackson.

WINCHESTER (Anglo-Sax. *Witanceaster*; anc. *Venta Belgarum*), a city and the capital of Hampshire, England, upon the S. W. railway, 12 m. N. N. E. from Southampton, and 62 m. S. W. from London; pop. in 1851, 13,704. It is built on rising ground upon the right bank of the river Itchin, which is navigable to the sea as a canal. It was formerly encircled by a wall and ditch, and entered by 4 gates. The W. gateway, surmounted by a massive Norman tower, is still entire, though somewhat defaced. The cathedral is built in the form of a cross, with a square tower at the intersection of the nave and transepts. The whole length is 545 feet, the width of the transepts 186 feet, and the height of the tower, which rises only 26 feet above the roof, 138½ feet. It was first built in 648, and parts of the present edifice date from 980. The church of St. Lawrence is also a very ancient edifice; beside which there are several other churches, and a Benedictine nunnery. Winchester college was founded by William of Wykeham in 1387; it occupies an extensive range of buildings, among which the chapel, hall, and library are particularly worthy of notice for the beauty of their architecture. The town hall; the chapel of the old castle, which has been converted into a county hall, and contains the curious round table, said to have been King Arthur's, suspended above the judge's seat; the barracks for 2,000 men, which occupy a splendid building erected for a palace by Charles II.; a county hospital, said to be the best of the kind in Great Britain; St. John's house, which once belonged to the templars, and is now used as a public assembly room; and the ruins of Wolvesey castle, are all particularly interesting. Winchester has also a guild or town hall, which contains among other curious articles of antiquity King Edgar's "Winchester bushel" and other ancient standards of measure, a small theatre, and a public library and reading rooms. About a mile S. of the city stands the hospital of St. Cross, founded in 1136 by Henry of Blois, for the permanent retreat of 13 poor old men, and for the provision of a dinner daily for 100 others. There are no manufactures of importance.—Winchester is one of the most ancient towns of England, and was a place of importance in the days of the ancient Britons, who called it Caer Gwent or the White City. The Romans are supposed to have built the walls. In 519 Cerdic, the Saxon chief, captured it, and afterward made it the seat of his government. Under the Danes it became the capital of England, and so remained until after the reign of Henry II. It was an occasional residence of the English sovereigns till the time of George I.

WINCHESTER, Elhanan, an American clergyman, born in Brookline, Mass., Sept. 30, 1751, died in Hartford, Conn., April 18, 1797. In 1769 he united with a Separate church in Brookline, soon afterward commenced preaching, joined the open communion Baptists in Canterbury, Conn., in 1770, and in 1771 was ordained pastor of a church in Rehoboth, Mass. About a year later he adopted the views of the restricted communionists, for which he was excommunicated by his church. He resided in South Carolina from 1774 to 1780, when he became pastor of the first Baptist church in Philadelphia. The next year, having avowed his belief in the final restoration of the wicked to a state of holiness, he founded with the majority of his congregation a new church. He went to England in 1787, preached the doctrine of restoration with great success, and published "Four Dialogues on Universal Restoration" (1788), "Lectures on Unfulfilled Prophecies" (1790), "Five Letters to Rev. Dan Taylor" (1790), "The Process and Empire of Christ," a poem in 12 books (1793), and "The Three Woe Trumpets" (1793). He returned to America in 1794. Beside the works above enumerated, he published 37 other volumes, of which the most important are: "Life of Dr. George de Benneville;" "Five Letters on the Divinity of Christ;" "The holy Conversation and high Expectations of Christians;" "The Beauties of the Millennium;" "The Face of Moses Unveiled;" "Ten Letters to Thomas Paine, in reply to his Age of Reason" (1794); "Political Catechism" (1765); "Hymns on the Restoration" (1795); "Observations on the Times, and on the seventh Trumpet in the Revelations;"

and "Addresses to Jews, Deists, and Christians." His life was written by the Rev. Mr. Vidler, and by the Rev. E. M. Stone (Boston, 1836).

WINCKELMANN, Johann Joachim, a German writer on ancient art, born in Stendal, Dec. 9, 1717, assassinated at Trieste, June 8, 1768. The son of a poor shoemaker, he was enabled by charity to study at the Latin school of his native town, where he was remarkable for proficiency in the ancient languages, and began his familiarity with writings on sculpture and painting. In 1735 he went to a gymnasium in Berlin, and while there it is related that he once walked to Hamburg to buy books with money begged on the way. In 1738, still supported by friendly aid, he entered the university of Halle, where he studied ancient belles-lettres, and, after a short period of service as a private tutor, spent a year at Jena in mathematical and medical studies, and then another year as a private tutor. In 1743 he obtained the situation of assistant teacher in a school at Seehausen, where he spent 5 years, living on a pittance and working with enthusiasm in his favorite studies. In 1748 he obtained from Count Bünau a place as his private librarian, with a salary of 80 rix dollars. This brought him into the vicinity of Dresden, and in that city he passed much of his time, examining its noble stores of art treasures and frequenting the society of artists and men of artistic culture. Archinto, the papal nuncio, became much interested in him, and offered to procure for him a situation in Rome, whither all his desires were tending. Finally in 1754 he became a Roman Catholic, as the Protestants alleged more from artistic aspiration than religious faith; and having received through the aid of Father Rauch, confessor to Augustus III. of Poland, a pension of 200 rix dollars for two years, he set out for Italy in 1755. At Rome he was kindly received by Benedict XIV., and found friends in Cardinals Passionei, Albani, and Archinto (who had befriended him in Dresden), and became intimate with Raphael Mengs, who exercised much influence on the subsequent course of his studies, which were henceforth consecrated exclusively to art. Before leaving Germany he had published his *Gedanken über die Nachahmung der griechischen Werke in der Malerei und Bildhauerkunst* (1754), and his first publication after his arrival in Rome was a reply to the critics of that work (1756). In 1758 he went to Naples, examining with especial delight the antiquities of Portici, Herculaneum, and Pompeii, and shortly afterward made a visit to Florence, where he spent 9 months in arranging a valuable collection of antique gems belonging to Baron Muzel-Stosch, the fruit of which appeared in his *Description des pierres gravées du feu baron de Stosch* (Florence, 1760). Soon after his return from Florence he was appointed librarian and custodian of antiquities to Cardinal Albani, with lodgings in his house and a salary of 120 scudi. He now completed his work on ancient architecture, published in Germany two years later, *Anmerkungen über die Baukunst der Alten* (Leipsic, 1762), and in 1763, through the influence of Cardinal Albani, was appointed antiquary of the apostolic chamber, or superintendent of antiquities in and about Rome, and also an assistant librarian of the Vatican. His situation would have been much improved by his becoming a priest, but this he refused to do. A second and third visit to Naples resulted in his *Sendschreiben von den herculanischen Entdeckungen* (Dresden, 1762) and *Nachricht von den neuesten herculanischen Entdeckungen* (Dresden, 1764). His *Geschichte der Kunst des Alterthums* (Dresden, 1764), and the supplementary work *Anmerkungen über die Geschichte der Kunst* (1767; enlarged ed., 2 vols., Vienna, 1776), still remain the most important essays on that branch of æsthetics (translated by H. Lodge, 2 vols. 8vo., Boston, 1849). An offer from Frederic the Great of the post of superintendent of the library and antiquities in Berlin was accepted, but the pope increased Winckelmann's salary from his own purse, and retained him in Rome. In April, 1768, he set out on a visit to Germany in the company of his friend Giuseppe Cavaceppi, a sculptor. He was received in the most flattering manner in Munich and Vienna, Maria Theresa giving him costly presents and making him the most attractive offers; but a sort of homesickness for Italy seemed to have possession of him, and he set out on his return without having visited other parts of Germany. Separating himself from Cavaceppi, he arrived alone at Trieste on May 1. There a villain named Arcangeli, who had already been punished as a thief, gained his confidence, and after dining with him asked to see his collection of rare coins and medals, and, as Winckelmann declined to show them, attempted to strangle him with a rope, and on his vigorously defending himself stabbed him so that he died a few hours afterward. He was buried at Trieste, where in 1820 Rosetti erected a monument to him. —In addition to the works already named, Winckelmann published *Monumenti antichi inediti*, with 227 plates (Rome, 1766), and wrote an *Abhandlung von der Fähigkeit der Empfindung des Schönen*, which was published posthumously (Dresden, 1771). A collected edition of his works was published by Fernow, Meyer, and J. Schulze (2d. ed., 8 vols., Dresden, 1828), and his letters were collected by F. Förster (3 vols., Berlin, 1824–'5). Goethe's *Winckelmann und sein Jahrhundert* affords the best appreciation of his labors. His birthday is still celebrated by the archæological institute in Rome.

WINCKLER, Johann Heinrich, a German philosopher, born at Wingendorf, Saxony, March 12, 1703, died in Leipsic, May 18, 1770. He was graduated at the university of Leipsic in 1729, became a zealous advocate of Wolf's philosophical system, and was professor of Greek and Latin and afterward of physics at Leipsic. He contributed much to knowledge upon electricity, and proposed in 1733 the use of conductors as means of safety against lightning. Franklin benefited by his suggestions. He wrote on electricity and on Wolf's philosophy.

WIND. See WINDS.

WINDER, WILLIAM H., an American general, born in Somerset co., Md., in 1775, died in Baltimore, May 24, 1824. He was a lawyer in Baltimore at the breaking out of the war of 1812, when he was appointed lieutenant-colonel of infantry, March 16, 1812, and colonel in July of the same year. He distinguished himself by leading a successful expedition from Black Rock to the Canada shore, Nov. 28, 1812; was promoted to be brigadier-general in March, 1813; taken prisoner at Stony Creek in June, 1813; appointed adjutant and inspector general in May, 1814; commanded at the battle of Bladensburg, and the unsuccessful defence of Washington city, in Aug. 1814; and on the reduction of the army, in June, 1815, was discharged, and resumed the practice of the law.

WINDERMERE, an English lake, lying in Lancashire and Westmoreland. It is about 11 m. in length, and from ⅓ of a mile to a mile in width, its area being a little over 5 sq. m., and its depth varies from 30 to 240 feet. Its outlet is the river Leven, which discharges its waters into Morecambe bay. The lake is surrounded by gentle, well wooded eminences. It is abundantly stocked with fish, including perch, pike, trout, and char. The last are taken in large quantities at the proper season, and potted for market. Wordsworth lived at Rydal Mount about 2 m. from the head of the lake.

WINDHAM. I. A S. E. co. of Vt., bordering on Mass., and separated from N. H. by the Connecticut river; area, 780 sq. m.; pop. in 1860, 26,983. The surface is generally hilly, and in the W. part mountainous, and the soil is fertile. The productions in 1850 were 8,749 bushels of wheat, 210,141 of Indian corn, 160,393 of oats, 338,295 of potatoes, 1,144,653 lbs. of butter, 469,728 of cheese, 179,122 of wool, and 84,749 tons of hay. There were 49 grist mills, 130 saw mills, 11 woollen factories, 3 iron founderies, 20 potteries, 21 tanneries, 65 churches, 4 newspaper offices, and 8,773 pupils attending public schools. Granite of an excellent quality is very abundant. The county is traversed by the Vermont valley, the Vermont and Massachusetts, and the Rutland and Burlington railroads. Capital, Fayetteville. II. A N. E. co. of Conn., bordering on R. I. and Mass., and drained by the Quinebaug, Willimantic, Shetucket, and Natchaug rivers; area, 620 sq. m.; pop. in 1860, 36,445. The surface is very much broken, and the soil along the streams is highly fertile, but poor in other parts. The productions in 1850 were 240,276 bushels of Indian corn, 35,130 of rye, 154,264 of oats, 297,098 of potatoes, 599,004 lbs. of butter, 817,073 of cheese, 55,593 of wool, and 56,138 tons of hay. There were 14 grist mills, 109 saw mills, 48 cotton factories, 15 woollen factories, 4 cordage manufactories, 5 machine shops, 185 boot and shoe manufactories, 9 tanneries, 67 churches, 3 newspaper offices, and 7,742 pupils attending public schools. The county is intersected by the Norwich and Worcester, the Hartford, Providence, and Fishkill, and the New London, Willimantic, and Palmer railroads. Capital, Brooklyn.

WINDHAM, CHARLES ASHE, an English general, born in the county of Norfolk in 1810. His name was originally Lukin, but he took that of Windham on succeeding to the property of his uncle, the Right Hon. William Windham, M. P. He entered the army as an officer in the Coldstream guards in 1826, and became captain in 1833, major in 1846, and colonel in 1854. He distinguished himself in the Crimean war, especially in the battles of Balaklava and Inkerman, and at the advance on the Redan, and for his conduct in the last named action was promoted at once to the rank of major-general. He was made governor of that portion of Sebastopol occupied by the English, commander of the 4th division of the army, and chief of the staff. On his return to England in 1855 he was nominated a companion of the bath, and elected to parliament in the liberal interest for the eastern division of Norfolk. In 1858 he served in suppressing the Sepoy mutiny in India, and was afterward military governor of Lahore.

WINDHAM, WILLIAM, an English statesman, born in London, May 3, 1750, died June 3, 1810. He was educated at Eton, the university of Glasgow, and University college, Oxford, which he left in 1771. He subsequently passed several years in foreign travel. He made his first appearance as a public speaker at a meeting held in Norwich in 1778, for the purpose of procuring voluntary subscriptions to aid the government in carrying on the war against the American colonies, and denounced the whole project with eloquent emphasis. His speech made so strong an impression upon the electors of Norwich, that at the general election of 1780 he was put in nomination and received a large number of votes, though not enough to elect him. From this time forward he mixed much in literary and political circles, and became a member of Dr. Johnson's literary club and a friend of Burke and Fox. He was returned for Norwich in the general election of 1784, and made his maiden speech in parliament in Feb. 1785, in the debate on the Westminster election case, when he replied with so much effect to Pitt that Fox congratulated the house on the "accession of the abilities they had witnessed." He was at once recognized as a prominent leader of the whigs, and in 1787 was appointed one of the managers of the impeachment of Warren Hastings. He subsequently supported the prince of Wales in the regency question arising out of the king's illness; and when the whigs became divided by the events of the French revolution, he joined that portion of the party which, under the lead of Burke, the duke of Portland, and others, advocated war with France. In 1794 he entered Pitt's cabinet as secretary at war, the duties of which office he discharged during the next 7 years with eminent success. He retired from office in 1801 with Pitt and others; and in an address to the king moved by him in the house of commons in the succeeding year, he vehemently denounced the peace of Amiens, then recently concluded by the Addington ministry. This course lost him his seat from Norwich at the general election in the summer of 1802, but through the interest of the Grenville family he was immediately returned for the borough of St. Mawes, declining an offer made to raise by subscription a fund to enable him to contest Norfolk. He declined a seat in the new ministry formed by Pitt in 1804, on the ground that Fox had been expressly excluded from it, and upon the death of Pitt in 1806 entered the Grenville or "all the talents" administration as secretary for the war and colonial departments. He retired from office with his colleagues in 1807, and thenceforth remained in opposition. The Copenhagen and Walcheren expeditions in particular found in him a determined opponent. He died of a tumor in the thigh, which resulted from an injury received while assisting in the preservation of a valuable library from a conflagration. He was a man of many accomplishments, being likened by Dr. Johnson to the *inter stellas luna minores*, and was considered by his contemporaries not unworthy to rank with orators like Burke, Fox, and Pitt. His eloquence, as Canning observed, if not the most commanding ever heard in the house of commons, was the "most insinuating;" and Macaulay has characterized him as "the finest gentleman of the age—his form developed by every manly exercise, his face beaming with intelligence and spirit—the ingenious, the chivalrous, the high-souled Windham." His speeches have been published in 3 volumes (London, 1812), with a life prefixed by Thomas Amyot, for several years his private secretary.

WINDISCHGRÄTZ, an ancient noble family of Germany, descended from Weriand, second son of Ulrich, duke of Carinthia, who flourished toward the end of the 11th century, and came into possession of the town and district of Windischgrätz. At a later period the line divided into two branches, of which the elder bought in 1468 the castle of Waldstein, and in 1551 was raised to the baronial rank under that name, and in 1557 to the dignity of counts under the earlier title of Windischgrätz. From 1556 both lines possessed the dignity of knights in Styria and that of magnates in Hungary. After the purchase of the estates of Egloff and Siggen in Swabia, the title of prince was given to the first born of the house (1804), but in 1822 was extended to all the members.—The most conspicuous member of the family is Prince Alfred zu Windischgrätz, an Austrian field marshal, born in Brussels, May 11, 1787, died in Vienna, March 25, 1862. In 1804 he became a first lieutenant in Schwarzenberg's regiment of lancers; in 1813 lieutenant-colonel; and for his brilliant conduct at the battle of Leipsic he was made colonel and given the command of the cuirassiers of the grand duke Constantine. In the campaign of 1814 he highly distinguished himself, especially at the battle of Troyes. He was made major-general in 1826, and in 1833 was promoted to the dignity of lieutenant field marshal and general of division. On March 15, 1848, on the outbreak of the revolution in Vienna, he took command of the troops in Lower Austria, but was deprived of his command in the following April and sent back to Bohemia. In June his wife was killed and his son mortally wounded at the outbreak connected with the Slavic congress in Prague. Barricades were thrown up, and the prince withdrew to the heights commanding Prague, and bombarded the place for 48 hours, when it surrendered at discretion. When in October a new insurrection broke out in Vienna, he marched to that city, and on the 16th was made field marshal and commander-in-chief of all the imperial armies with the exception of those under Radetzky, then in Italy. On Oct. 20 he declared Vienna in a state of siege, and on the 28th its principal defences were stormed after a most terrible conflict; and a Hungarian army sent to the relief of the insurgents being defeated, the city surrendered, Oct. 31. The execution of numerous popular leaders, among others of Robert Blum, a distinguished member of the Frankfort parliament, and deputy of the opposition party in that assembly to Vienna, who was tried by court martial and shot, rendered Windischgrätz a special object of hatred to the democratic party throughout Germany. The attention of the Austrian court was now turned to the suppression of the rebellion in Hungary, and the prince received the chief command of the imperial troops collected on the March and Leitha. After several successful engagements with the retreating Hungarians under Görgey, he advanced as far as Pesth, where he remained inactive for nearly two months, and then moving northward gained on Feb. 26 and 27 the barren victory of Kápolna. In March the renewed advance of the Hungarians compelled the Austrian general to retreat, and in April his forces were defeated in a series of battles, in the vicinity of Pesth. (See Görgey.) It now became necessary for the Austrians to evacuate in a few days Buda and Pesth, and Windischgrätz was deprived of his command and retired to private life, April 12, 1849. In 1851 he published at Vienna a work entitled *Der Winterfeldzug von* 1848–'9 *in Ungarn*, defending his conduct of the campaign. Shortly before his death he took a conspicuous part in the debates of the Austrian *Reichsrath*.

WINDISCHMANN, Karl Joseph Hieronymus, a German philosopher, born in Mentz, Aug. 24, 1775, died in Bonn, April 23, 1839. He studied medicine and philosophy at Würzburg, and in 1801 went to Aschaffenburg as court physician to the elector of Mentz. At the university, which had been transferred to that place, he delivered lectures upon philosophy and history, and in 1803 became professor of those branches, and in 1811 librarian. In 1818 he was appointed professor of philosophy in the newly founded university of Bonn. His philosophical writings are strongly marked by mystical tendencies. He also wrote on medicine, and paid much attention to animal magnetism and to cases of wonderful and seemingly miraculous cures.—One of his sons, FRIEDRICH, is a distinguished Roman Catholic theologian and an accurate orientalist.

WINDLASS (formerly, it would appear, written *windlace*, from *wind* and *lace*, a cord), a general name for any machine consisting of a horizontal roller or barrel turned by use of handspikes upon pivots or gudgeons entering fixed supports at its extremities, and thus caused, by means of a rope or chain passing round it, to draw toward it or to raise heavy burdens. The barrel of the windlass has more or less nearly the form of a cylinder or 8-sided prism. The uses and operation of this machine are essentially the same with those of the capstan (see CAPSTAN), both these, together with the common winch and axle, being but so many convenient modifications, for particular purposes, of the wheel and axle. (See MECHANICS.) In fact, by substituting for handspikes a common crank at one or each of the extremities of the barrel, the windlass is converted into a common or hand winch; though the latter is usually of less size, and employed for lighter work. More rarely, large windlasses are turned by cranks with long handles, upon which 3 or 4 men act at the same time. In the use of either on land or upon boats for drawing or raising heavy weights, the rope or chain may be wound directly upon the barrel; or being passed 2 or 3 times round the barrel, it may then be seized by one or more men on the other side, who pull upon it, holding what is gained, and taking in the rope as delivered by the barrel. For such uses, moreover, its power is usually aided by the additional employment of pulleys. In a more special sense, the name windlass is appropriated to the apparatus of this sort, with horizontal barrel, employed for raising a ship's anchors, or for moving the vessel near to a wharf, by means of a cable attached by one end to a fixed object upon the latter. When intended for such use, the windlass is placed as far forward as convenient; and it is supported at the ends by stout upright pieces of timber, called bitts, which rise sufficiently above the decks, and also pass down through them so as to be firmly secured below. The ordinary windlass is less employed than formerly, being largely superseded by the capstan and by steam machinery, and is mainly confined to sailing vessels of the smaller sort. For work not of the heaviest kind, the winch with interposed gearing, as Bryant's, by which the effective power is largely increased, is found serviceable.—Among the few important improvements in windlasses, mention should be made of Manton's and Emerson's double windlasses (1855-'60), and Patten's capstan windlass. In both the two former, space on deck is saved by placing the horizontal windlass below the forecastle deck, and working it by means of bevelled toothed wheels by an upright portion or double capstan rising above the deck. This double capstan has two barrels and heads, the lower and outer of which can be turned independently of the inner, and so employed for purposes of an ordinary capstan, where less power and greater speed are required. Or, inserting the handspikes in the mortises of the upper and inner capstan head, this is made to actuate the windlass below, and a slower movement with corresponding gain of power results. The horizontal windlass, moreover, is in two lateral portions, so geared as to act with different speeds and degrees of power, as required for anchors of different weight, and which can be driven separately, or so as to raise both anchors at the same time. Emerson's double windlass is also constructed in forms suitable to be placed on the deck. Mr. S. P. Patten's capstan windlass (1860) consists in a connection of the capstan with the barrel of the windlass, by means of a worm wheel fixed on the barrel, and into which work the threads of an endless screw on a shaft descending from the capstan. This is also constructed in such manner as to be employed simply as a capstan, or to actuate the windlass, in the latter case (it is claimed) with a great gain in the efficiency of the power. Mr. C. Perley, of New York, patented in 1860 an improved vertical ship's windlass, so constructed as to admit of turning in either direction; and which, by means of brakes and of heavers that connect or disconnect, may raise or give out either or both cables at the same time; or, independently of the heavers, may be used as a capstan.

WINDMILL, a name originally given to a building containing machinery for grinding grain, and which is to be driven by the action of wind upon a set of wings or sails; but afterward applied to similar structures for accomplishing through the motive power of wind a variety of other purposes. Where water power is deficient or not readily accessible, and especially in many parts of continental Europe, windmills are much in use, not only for grinding, but also for sawing, expressing oils, the working of pumps in draining, &c. They have been introduced to a considerable extent in the United States. Windmills are of two general sorts: the vertical, in which wings or sails, ordinarily 4 in number, are so placed as to turn by the impulse of the wind in a nearly vertical plane, and hence about an axis nearly horizontal; and the horizontal, in which the wings turn in the direction giving the name, *i. e.*, about an axis exactly vertical.—The building of the vertical windmill is an ordinary wall of wood or brick, but commonly in the form of a frustum of a cone, and tall relatively to its breadth. The principal parts of the machinery are: 1, an axis in the top of the building, inclined (as observation has shown that the impulse of the wind is very commonly exerted in a line descending at such an angle) to the horizontal at 10° or 15°, and on which are the wings; 2, the wings, consisting of as many sail frames, with sails stretched on them, and which, if 4, are fixed in positions at right angles with each other, and that in all cases are mainly rectangular to the axis, their length being from 30 to 40 feet each; 3, a large toothed wheel upon the horizontal axis already referred to, carried about with it by the action of the wind on the sails, and of course standing at the angle of 10° to 15° with the vertical, and the teeth of which engage with those of a pinion upon—4, a truly vertical axis rising through the middle of the mill, and thus impart a movement of rotation to this, and (in case of grinding) to the upper millstone, which is fixed upon the lower end of this upright axis, and is made to turn beneath a hopper, and over the lower stationary millstone, in the ordinary manner. The first named, or as it may be called horizontal axis, is supported at its innermost end near the centre of the base of a dome or cover surmounting the mill; while its opposite extremity is let through a perforation in one side of the dome, and projects far enough beyond to receive the ends of the long timbers, or "whips," to which the sails are affixed. The suddenly varying and often extreme pressure of the wind upon the wings, renders it necessary that the supports of the horizontal axis, and all parts of the wings projecting from it, shall have great strength. Against the rim of the principal wheel upon this axis a brake can at the pleasure of the operator be brought to act, so as to stop the motion of the machinery when needful. The 4 radial timbers or whips have their inner ends let into the outer extremity of the horizontal axis. In the ordinary kind of wings, beginning at about 6 feet from the axis along each of these whips, there project on one or both sides of the whip a series of wooden pieces or staves, at right angles with the whip, usually growing shorter toward its extremity, and having their ends further joined by a continuous lath or strip of wood; the whole thus forms a sort of lattice, upon which the sail is to be stretched. If the plane, as we may term it, of this lattice, and hence of the canvas forming the sail when stretched upon it, were exactly at right angles to the direction of the axis, and (because this is, in a manner presently to be explained, made to turn toward the point from which the wind comes) therefore to the direction of the wind, of course the whole impulse of the wind would act to produce a strain upon the whips, and no revolution would result. The lattice and canvas are accordingly inclined to the line of the axis and of the wind at such an angle that, as in case of the obliquely set sails of vessels, the total force of the wind is resolved into components, a considerable one of which takes effect in the direction at right angles to the axis, and produces the revolution. The different parts of the sail have not, however, the same angle in respect to the line of the wind. The velocity of revolution of each wing increases from its inner to its outer end; and mathematical considerations show that the inclination of the sail to the wind should increase as the velocity increases, the best effect being obtained when at different lengths along the wing the inclinations are about those here named: at ⅙ the length of the wing from the centre, 70°; at ⅓, 71°; at ½, 72°; at ⅔, 74°; at ⅚, 77½°; at the end, 83°. Other authorities give the inclinations from 60° to 80°. The result is that the surfaces of the sails are not oblique planes, but curving, or rather warped outward, in going from the centre to the extremities. Mr. Smeaton found that the velocity of the extremity of the sails is often to that of the wind in a ratio greater than that of 2 to 1; and according to Euler, when the velocity is that of 2 to 1, the efficiency of the mechanism is greatest. Several methods are in use for bringing the axis in the line of the wind, that is, for bringing the wings to stand, speaking in a general way, in a plane at right angles to the direction of the wind, so that they may receive the most direct impulsion, from whatever point of compass the wind may come. When the tower or mill is of timber and of small size, it is so fixed upon a strong column or axis entering its base, which is also sufficiently elevated, that the whole tower can be turned around as desired, by means of a long and stout lever projecting from it below, and pushed by a person on the ground. In the case of stone and all large and heavy towers, the dome only is turned, carrying the axis and sails with it into the required position, while the vertical wheel merely travels about the pinion, and the connection is not broken. In order to allow the dome to turn, and at the same time to secure it in position, it is most usual to construct the tower open at the top, which is of course horizontal, and thus far resembles merely the extremity of a large tube; this opening is strengthened, however, by a wooden rim running completely round it, and on the upper surface thus exposed is a groove, in which small circular metallic rollers are placed, to turn on horizontal axes. The dome is made with a corresponding ring, grooved on its under side, so as to rest upon the rollers and turn on them; while it has also, further out, a lip or flange projecting downward, and so surrounding the rim of the tower—small vertical rollers being here also usually fixed between the two. Thus the dome can be turned with slight effort into any required position, and by appropriate means can then be fixed, if desired. The turning of the dome to the wind is effected in different ways: 1, by the employment of a toothed wheel engaging in a rack on its inner side, and turned by means of a so-called endless cord, by a man below working a winch; 2, by a method invented by Sir W.

Cubitt, consisting of a set of small vanes, placed in an upright position upon a long arm projecting in the same line with the horizontal axis, but on the opposite side, these vanes nearly in the direction of the axis and arm, *i. e.*, at right angles to the plane of the sails, and by their revolution turning a shaft and pinion, and finally acting upon teeth surrounding the exterior of the dome and moving it; 3, the much more simple, and usually quite as effective means of a very large and strong vane, like an immense weathercock, projecting opposite the axis and wings, the plane of this vane being vertical, so that the wind, however shifting, acts directly upon this to bring the axis and sails still into the required relation to its course at the time.—In situations in which the great height of the vertical sails would be objectionable, the horizontal windmill is sometimes brought into use. In this, 6 or more wings, usually of plain boards, are set upright the whole height of the tower, being attached to upper and lower disks or platforms, and the whole is turned by the force of the wind about a vertical axis at its middle part. If the wings are fixed in position, they are set obliquely to the direction in which the wind will strike them. Outside of the whole is then placed a screen or cylindrical arrangement of boards not intended to revolve, these boards being also set obliquely and in planes lying in opposite course to those of the wings. The result is, that from whatever direction the wind may blow against the tower, it is always admitted by the outer boards to act on the wings most freely on that half of the side it strikes, on which the wings are turning away; and it is mainly, though not entirely, broken from the wings which, in the other quadrant of that side, are approaching the middle line. In this arrangement, still, only one or two wings can be effectually acted upon at the same moment, and some resistance to those wings that are approaching the middle line is unavoidable. Hence, with a like area of the wings, the power of the horizontal is always much less than that of the vertical windmill. Mr. Smeaton estimated the former at $\frac{1}{10}$ only of the latter; but Sir David Brewster, showing that in this he had overlooked the loss in vertical mills of one component of the wind's pressure, concludes that the ratio is no less than that of 1 to 3 or 4. The effective power of the vertical mill is however so much greater, that the horizontal is seldom constructed.—Mr. Smeaton found that the efficiency of the sails is greater as they are broader at the extremity than near the centre, up to but not beyond a greatest breadth equal to $\frac{1}{3}$ the length of the wing; that if the total area of sails exceed $\frac{7}{8}$ of the area of the circle described by the wings in their revolution, the velocity is diminished; that the maximum of work is obtained when the velocity of the wings as loaded with the work performed is to that they would have without load as 2 to 3; and that when the work is a maximum, the velocity of the sails still varies nearly with that of the wind. The following table will be useful, as presenting approximately the effective total pressure of the wind per square foot upon the sails, at different velocities; the proper deductions requiring of course to be made for the angle at which the wind meets the sail, and for friction:

State of wind.	Velocity in feet per second.	Pressure per square foot on sails.
A low wind	3	0.0409
" "	6	0.1024
A moderate wind	9	0.2048
" "	12	0.4096
" "	15	0.6144
A fresh wind	18	0.8892
Best wind for wind sails	21	1.2788
" " " "	24	1.6384
A good breeze for sailing vessels	27	2.0780
" " " " "	30	2.5576
A stiff breeze	33	3.1820
" "	36	3.8912

The variations in the pressure of the wind being considerable, often so within a brief time, and sometimes sudden and extreme, it becomes desirable to have means provided for regulating the sails accordingly; and a large share of the more recent inventions in connection with windmills have this for their object. The old or usual plan is attended with much trouble and delay; in it, the canvas can by means of a rope to each wing be taken in or let out, or that of each wing is made in 3 portions controlled by separate ropes; in either case, the mill must be stopped by applying the brake, and a man must usually ascend the wings successively for the purpose. Mr. Bywater, of England, applied along each whip or arm of the wings a small roller, running its whole length, and upon which the canvas could be rolled or unrolled as necessary; this was accomplished by a toothed wheel on the central end of the roller, into which two other wheels worked, one for rolling up and the other for unrolling, and either of which could be allowed at the control of the operator within the mill to take effect. M. Berton, a French millwright, contrived a form of wings consisting each of a series of slats mounted like those of a Venetian blind. These, by transverse rods, and a pinion on the horizontal axis receiving its motion from within the mill, could be set at any obliquity to the wind, shifted as required, or folded up completely. The mechanical difficulties attending the use of very complex mechanism, among which is the liability to get out of order, have prevented thus far a very general adoption of any improvements of this sort. Among American inventions designed to secure regulation of the force received by the sails, one of the most noticeable is that of Mr. Henry Glover, of Oxford, Mass., its most improved form being patented in 1862. In this, each of the sails, 6 in number, set at a proper angle to the wind and enlarging outward, is constructed of a series of broad shutters, or partial wings, that turn on axes at right angles to the length of the wing, and are sustained in the timbers on rods that form its sides. These timbers are set in a hollow shaft or axis, which carries within the dome the principal wheel, and moves the machinery. Through the hollow shaft meanwhile extends a smaller solid shaft, which is made to regulate by suitable connections the angle at which the shutters shall stand to the wind. To accomplish this by the wind itself, at the more exposed side of each wing, and near the middle of its length, a small "regulating vane" is fixed in position out of centre to an axis crossing the frame; and by connecting rods and arms joining this axis with the several shutters of the wing, the turning of the axis to any extent opens at once and through the same number of degrees all the shutters, placing them proportionally oblique to the wind, and leaving spaces through which it escapes between them; while by another set of connecting rods, from each axis or middle shutter to an arm on a "spider" (a ring with 6 radial arms) turning on the small shaft, all the wings are connected, so that the turning of the shutters of any wing to any obliquity necessarily opens those of all to the same extent; and spiral springs at the back of the shutters continually resist their opening, so that they are brought back in part or completely as soon and as often as the excess of pressure is relieved. When the shutters are thus closed and the sail complete, the regulating vane stands in the plane of the wing; but if a sudden gust of wind strike the sails, it will necessarily act also on one or more of these vanes; and by turning them, it will proportionally open all the shutters, and prevent a sudden increase of velocity. The vanes, being fixed to their axes, each by a key through a slot, can be set at points more or less near their centres, so that, as may be desired, a given impulse on them shall take greater or less effect, according to the difference of areas on which the wind acts on the two sides of the axis. For regulating the velocity at the will of the operator, or stopping the mill, by means of a clutch and of connecting rods and levers passing from the small shaft down into the mill house, this shaft can be retracted or drawn in, when the action of the wind will force the shutters to open, and the revolution is accordingly checked. One of the most remarkable inventions in connection with the improvement of windmills appears to be that patented in 1861 by Mr. A. Giraudat, of New York. In this, all necessity of a turning dome and horizontal axis is simply obviated, while in fact the wind wheel can be conveniently erected above the roof of any building, its axis descending through the roof to machinery within; and this machinery can be of almost any sort requiring moderate or ordinary power; for one important application of it, the running of sewing machines, a patent was obtained in July, 1862. The results thus intimated are secured by constructing the wind wheel simply with 4 or 8 horizontal arms, on which solid square or oblong sails (rather tables) are carried, and by the revolution of which the vertical axis supporting them, and the machinery connected with it, are directly turned. The sails swing on the arms so as to be brought down perpendicular to a wind striking them on one side, and lifted toward a horizontal position, so as to prove ineffective when it strikes them on the other. Such an arrangement, as in case of the horizontal windmill already described, is equally effective, from whatever quarter the wind may blow, or however it may shift, so that no means of turning it to the wind are necessary. For regulating the velocity, each sail can slide in from the end of its arm to near the axis; and it is caused to slide one way or the other by the action of a heavier and of a lighter weight on parts of a sort of endless cord attached to it, and both meanwhile upheld by means of iron links at the ends of the respective arms. If the impulse of the wind become excessive, the weights are by centrifugal force thrown outward, and the action draws the sail in toward the axis, where it can exert less effect, while the small weight slides up the link to allow of this; when the excessive impulse ceases, the heavier weight and link return to a more nearly vertical position, and the lighter weight, sliding down the link, returns the sail to the end of the arm. With his windmill proper, also, Mr. Giraudat has connected an ingenious contrivance including a very great number of iron balls, which, by a vertical band and lifters, are during strong action of the wind carried up in a little time and disposed in inclined troughs, and which, when a lull of the wind may require, being allowed to be fed on one side into depressions in the periphery of a large vertical wheel, continue to work the machinery for a time after the moving power of the wind has ceased.

WINDOW (according to Skinner, from *wind door*), an opening usually in the wall, but sometimes in certain parts of the roof of a building, intended for the admission of light, or as occasion may require of air, into its interior; and which, since the general introduction of glass, is guarded by panes of that material set in light frames, or sashes fitted within and occupying the opening. Of every edifice designed to serve as a habitation or a place of assemblage, such openings form a most essential feature; and in all climates and seasons in which cold or tempestuous weather would incommode the occupants, some device such as the employment of glass, by which light is admitted while the external air is excluded, becomes equally requisite. The windows of the oldest remaining structures, which are of course of stone and of massive proportions, and examples of which are found in some of the earliest structures of Egypt and Greece, are seen to have been very irregular in their form and disposition. They were often mere breaks or inlets through the wall, small and few in number, and of roughly triangular or oblong outline. Indeed, the remains of ancient architecture show that windows were almost unknown, or at least that, for the religious and other public edifices of the period, they were scarcely considered necessary. It is certain that where introduced they were comparatively few, small, and narrow; and that much time and observation, as well as the needs of colder climates and the growth of new styles of architecture, were required to give to windows the important place they now hold, and to demand for them the exactness of adaptation and of symmetry with each other and the entire edifice illustrated in modern construction. The windows of the bath of Scipio were, according to Seneca, little more than crevices through the wall. When the Romans began to make their habitations more commodious, they also enlarged their windows, thus securing increased light and a better command of the surrounding prospect. In the country seats of Pliny, at Laurentinum and Fusci, the windows were of great dimensions; and in their amphitheatres and basilicas, the Romans even introduced successive tiers of symmetrical windows, and with fine effect, as is most familiarly shown in the ruins of the Colosseum. Grecian architecture, depending for its effect chiefly on columns, scarcely admitted of windows; and these, which appear in rare instances only, were few in number, placed high and forming but one tier, so that their use within as well as their appearance differed wholly from those of modern windows. So, the houses in Pompeii have their windows mainly on the side looking into the garden, and usually none in those rooms facing on the street or court, which must have been lighted by the door; or when windows are found on this side of the buildings, they are so high and small that they could have served only for admitting light. The earlier windows now referred to were in many instances left open. In private dwellings they were doubtless often covered or closed with some light stuff or fabric, more or less translucent. Mica and horn are known also to have been in use, the former being the material usually intended by the term *lapis specularis*, or transparent stone. In the time of Nero a yellowish, firm, and translucent marble, termed *phengites*, was discovered in Cappadocia; Nero's golden house, and the temple of Fortune, built of this, were tolerably light within, though having no windows; and the same material was used also in windows, and for enclosing porticos, giving, it is said, a sufficient view of objects without. At what time glass began to be employed for enclosing windows, it may be difficult to determine. Pliny speaks of glass as used both by the Greeks and Romans; but Lactantius, who wrote in the 4th century A. D., is the first writer to mention windows of glass. The rare occurrence of glass in windows in Pompeii and Herculaneum would appear to show that this material was at the time of the destruction of those cities employed in a few edifices, but not in all. (See GLASS.) The windows of Italian dwellings continue to be made fewer in number for the same size of building than of those in higher latitudes; the purpose thus insured being the admission of less of the intense light and heat of the warmer climate. In all the variations of Gothic architecture, windows have been from the first an important feature, the ornamentation of the building being in a considerable degree in its windows and their accessories; while by the windows mainly is determined the division of the Gothic style into periods, as the "first," "second," and "third pointed," or the early English, decorated, and perpendicular.—The almost endlessly varying forms of window now in use may be mainly grouped under the two general styles known as the Gothic and the Italian. In either of these styles, the disposition of windows can be made to contribute very materially to the general decoration or architectural effect of a building; while their various purposes, and the varying circumstances of situation, call for great diversity in the size and number of them that may be allowed, and render the proportioning and character they are to receive among the nicest of the problems of the architect.

WINDPIPE, or TRACHEA. See LUNGS.

WINDS, currents of air established at certain times and places within the body of the atmosphere at large, and flowing during periods longer or shorter in certain general directions; such currents being occasioned chiefly by differences of temperature at different times or localities, and by variations in the production and condensation of watery vapor. The portion of the surface of the globe over which any particular wind, permanent or occasional, may extend, is comparatively small, as is consequently the tract of the entire aërial ocean resting on that surface that is involved. At all times, also, there are parts of the atmosphere that are sensibly at rest or calm; and such apparently motionless tracts of air are sometimes of very great extent. For a statement of the physical properties of the air, see ATMOSPHERE; and in reference to the mechanical principles of equilibrium, mobility, and disturbance of a fluid mass circumstanced as is the air, see PNEUMATICS. The atmosphere is held to the earth only by gravity, and the action of this force does not interfere with its fluidity or elasticity, nor with the effect of any pressures acting at points within it; so that its parts have entire freedom of motion about or among each other, and it is in every part sensitive to the slightest disturbing forces. Since, however, the globe with its aërial envelope is to be regarded as moving in unresisting space, and since the friction of the earth's surface upon the lowest stratum of air, and of the strate successively one upon another, has sufficed to communicate to the entire body the earth's own velocity, it follows that the atmosphere, if it were left at rest within itself, must partake of the earth's movements as perfectly as if it were a solid part of that body. Consequently, to an observer at rest anywhere within it, the air can never give evidence of a current or wind, except as this is occasioned by local disturbing causes. After any such cause has imparted a new motion to certain parts of the air, that is, a motion relative to points on the earth's surface, then an effect of the daily rotation of the earth can appear; the latter cause, though it cannot produce a wind, serving to give to one otherwise produced a new apparent direction. Winds, then, are sensible movements of parts of the atmosphere, caused to take place independently of and in addition to those great but unperceived movements of annual and diurnal revolution which it has in common with the solid earth. Their two great sources are those which Sir J. F. W. Herschel calls "the two great elements of climate," namely, heat and moisture; but in accounting for their directions, we must add to these a third element, the influence of the earth's rotation upon its axis.—The simplest of the disturbances affecting the atmosphere are the movements of "atmospheric waves" of greater or less magnitude and duration, but of two sorts, the daily and the occasional or irregular, the occurrence of which is shown by certain periodical or rare, but gradual variations of barometric pressure. From the nature of the medium, these waves are, as compared with those of water, on a vast scale. The indications of the barometers at stations scattered over a large area of country show that these waves move singly, and indicate their breadth, and the direction and rate of advance; a generally increased or maximum pressure showing at a given time the presence of the crest, while at distances on either side of this a minimum pressure shows the margins or accompanying troughs of the wave. Of daily atmospheric waves, or tides, there are two: 1, that due to attraction of the sun and moon, and which in periods and character is therefore similar to the oceanic tides, but which, its maximum effect on the mercury column not exceeding $\frac{1}{130}$ of an inch, cannot be a cause adequate to produce winds; 2, the heat tide, or elevation of a crest of air along a meridional line following the sun at no great distance, while the cooling on the opposite side of the globe occasions the advance of a corresponding line of depression, this tide having therefore for its period a solar day, and within that period but a single crest, instead of two opposite ones. With this daily heat tide is directly connected that tendency of winds within the temperate zones to veer or rotate completely about the compass at a given place, presently to be referred to as generalized in Dove's law of the rotation of wind; but whether it is also influential in originating winds, is as yet undetermined. Beside these periodic fluctuations, there are occasional vast atmospheric waves, due perhaps to previous winds, to great local disturbances of temperature, or to combinations of causes not yet understood. The wave of Sept. 21, 1836, passed over the west of Europe having its crest N. N. E. and S. S. W., and its progress about at right angles to this, or to E. S. E.; its half breadth was 540 miles, and it was 26 hours in passing a given point at the rate of 26 miles an hour, its barometric equivalent being 0.2 inch. The wave of Dec. 21, 1837, travelled in a direction slightly S.of E., and was traced from the west of Ireland to Parma in Italy; it advanced 18.62 miles per hour, and its barometric measure was $\frac{3}{4}$ inch, calculated to answer to fluctuations of the strata of the air through a vertical distance of 700 feet. Mr. Birt, of England, appears to have shown the existence of what he calls "the great November wave," passing annually over the north-eastern Atlantic and Europe, to S. E., its breadth being about 6,000 miles, and time of passage 14 days, at a rate of 19 miles per hour; while its barometric effect amounts usually to 1 inch of mercury, and in some years to twice that height. The researches of M. Leverrier show a connection between the passage of this wave and the memorable Crimean storm of Nov. 14, 1854. The possible connection of such waves with the production of tornadoes is further considered under WHIRLWIND.—The disturbances by heat that give rise to ordinary periodical or irregular winds, are such as occur along certain latitudes, or as are local and irregular altogether. An increase of temperature equal to 50° F. dilates the air receiving it by only about $\frac{1}{10}$ of its volume. From the direct rays of the sun air absorbs heat chiefly near the surface of the earth, and yet slowly even here, the warming of the air being more largely due to secondary radiation from the heated surface of the land or water. The heat acquired within a given time is usually by a very gradual increase, and limited in amount. If the warming of the air is quite uniform over a large surface, the equilibrium between the affected and the surrounding bodies may be steadily adjusted and preserved, so that no wind shall result; and it is a common experience of the hot season that, though the air at a place may be intensely heated, or through many degrees within a few hours, yet no wind may occur. During subsequent cooling of the same body of air a wind is more likely to arise, and especially so if clouds form at no great distance. Very generally, however, the effect of heating a tract of air in excess over that around it, is to occasion expansion and diminution of density; the column of air so affected moves or flows upward, and while the effect of its momentum further relieves its lowermost portions of pressure, and diminishes the resistance they can oppose to the surrounding air, the ascending body, losing at considerable height its excess of heat, acquires the density of air at such elevation, and flows over or outward, increasing the weight and pressure of some or all the surrounding portions. The lateral equilibrium below is thus destroyed, and a double movement of the air established, the air flowing in from one or more directions below the heated space, and flowing out above. But the momentum acquired in some given direction by the air rushing into the affected space may predominate, and, the conditions of neighboring portions of air favoring, a wind may thus be established that shall blow far beyond the point of first disturbance, as well as successively affect portions of atmosphere further back of it, and also extend widely, continuing for a long time before equilibrium and calm are restored. As a well known fact, however, high or widely extending winds are more likely to arise just before or during storms in which a considerable body of watery vapor is condensed and precipitated from the air, and yet more likely to be felt chiefly after such storms. Winds are also known to be produced in consequence of rapid and great evaporation, and even during the rapid formation of belts or masses of cloud without rain. Thus, though usually, existing currents of air, especially in the higher strata, determine the forming of clouds and in a degree the fall of rain (see CLOUD, and METEOROLOGY), yet secondarily evaporation, the forming of clouds, and the fall of rain are far more influential in producing winds at the surface of the earth than is heat alone. In fact, the heating of the air and increased evaporation over bodies of water usually take place together; and the forming vapor, like heat, exerts a lifting or ascensional power upon the air, and in two ways—by increasing the volume and tension of the air receiving it, and, as it is the lightest of known vapors, and lighter than air at the same temperature, by actually buoying and carrying up the air to a degree in its ascent. Hence, these causes usually conspire in effect; and it is not in all cases possible to decide what share each has taken in the first disturbance of an atmosphere previously calm. On the other hand, local excessive cold, or the generation of vapor in quantities not carried off by diffusion, must increase the weight and tension of the affected column of air, and in either case are likely to originate a wind outward or away from the place, and due to the excess of pressure. When any cause determines the condensation of vapor in the air so as to form considerable bodies of cloud, the latent heat of the vapor is imparted to the air of the region, and if the cold be such as to cause the forming of hail or snow, a still greater relative excess of heat over that of surrounding regions is the result; the effect in either case must be to lighten and cause ascent in the column so affected, and thus probably to originate a wind at the earth's surface. Or, if after the clouds form they are quickly carried off by higher winds to other regions, then the air which has lost so much weight of water is left lighter, and a like result may ensue. This is what occurs most constantly and on the largest scale over oceans in the tropical regions. The high temperature of the surface water, from 78° at the tropics to 83° at the equator, leads to an almost continuous profuse evaporation; the bodies of vapor formed and rising help to elevate the air with them; and both together flowing over above, and being removed in the higher currents moving away from the equator which had become previously established, they contribute to produce that relative lightness of the atmosphere and depression of the barometer that are constant in those regions. Thus evaporation, not less than the direct tropical heat, furnishes a cause of that continued outflow of air in the higher strata from the equator, and influx of the surface air from higher latitudes toward that line, presently to be referred to. Herschel found the depression of the barometer in passing from the tropic to the equator on either side, in 1833–'4, to be 0.24 inch of the mercury. Doubtless, the winds generated during, and so well known as continuing in this country from one to three days after severe storms of rain or snow, may be owing in a degree to excess of air mechanically brought down by the falling drops or flakes, and thus disturbing the equilibrium below; but much more commonly this cause is not sufficient for the wind that actually occurs, and the true cause of the latter is the very great lightening of large bodies of air by the abstraction of so much water which was previously held nearly or quite at equilibrium within them, with probably the ascent of some heated air at the place; and the severe and long continued wind following is due to the impulse acquired by bodies of air back to great distances, to flow into the spaces affording less pressure, until by such means the equilibrium is finally restored. The principal causes, direct and indirect, which give rise to winds, and when originated perpetuate them, are those which have now been considered; and the manner of their action is readily understood. It remains, however, very difficult, and usually quite impossible, to predict, in parts of the earth in which they are not simply periodical, the occurrence or character of winds; quite as much so, in fact, as to foresee with certainty the accession of storms or the vicissitudes of heat and cold.—A very small difference of atmospheric pressures, not compensated in any way, suffices to generate a considerable wind. By calculations from Bernouilli's formula for the velocity with which a gas under compression can issue through an orifice into a space containing air of less density, it is found that differences of pressure at points not remote equal to 0.006, 0.01, 0.016, 0.06, 0.14, 0.25, and 0.41 of an inch of the barometer, are sufficient when their effect is not resisted to generate winds having velocities respectively of 7, 14, 21, 41, 61, 82, and 92 miles per hour, or those of a gentle air, a light breeze, a good sailing breeze, a gale, a severe gale, a tempest, and a hurricane capable of sweeping away buildings, uprooting trees, and producing universal desolation. When winds of such velocities are actually produced, the pressures they will respectively exert per square foot of surface are 0.2, 0.9, 1.9, 7.5, 16.7, 30.7, and 37.9 pounds. But, in nature, the differences of pressure between points in the air more or less remote never take effect without resistances; so that usually, to give the velocities indicated requires time, or the actual differences of pressure must be greater than those stated. It is only when sudden and considerable differences of pressure are occasioned in atmospheric columns very near each other, that sudden winds of great violence can arise. When the tract or body of air which becomes relatively and sensibly lightened in any manner is one of limited extent, the tendency will be to the formation of currents to and from this as a centre; but if it is a linear tract, as for example a belt surrounding the globe, the winds will occur along parallel belts or zones of corresponding length, but naturally of greater width, flowing in sheets toward the belt of most rarefied air, ascending in it, and returning in higher strata in the reverse direction. This is what actually occurs in respect to a belt of air surrounding the earth mainly in the course of the equator, but usually somewhat N. of it, and along which belt, from combined influence of rarefaction and vaporization, and of the earth's rotation as affecting bodies of air already in motion, the pressure of the air is continually less than it is in those portions extending at least through two thirds of the distance to the pole on either side. Toward this belt below, accordingly, and from it above, a continual movement of air takes place, and this about the whole earth, as well as on both sides of the equator. The lower or surface current, N. of the equator, passing forward into latitudes in which the circuit and hence the velocity of the earth is continually greater, does not at once acquire the earth's increased motion, and hence falls behind it, or moves relatively to the W., thus forming a wind from N. E. to S. W.; though the less rapid increase of the earth's circumference on nearing the equator, and the gradual checking of the speed of this wind, giving time for the action of the earth upon it, causes the direction before ceasing to correspond nearly with the meridian lines. In the southern hemisphere, the corresponding wind is of course from S. E. to N. W., gradually verging in like manner to N. The belt between these winds, along which the air ascends to the higher strata, and which averages about 5° of breadth, is one within which the pressures from N. and S. have mainly or wholly neutralized each other; and this is the "equatorial belt of calm." The ascending columns of air in this belt part and flow back in opposite directions above. Having acquired a greater velocity than that of the parts of the earth over which they successively move, they now relatively gain on the movement of its surface; so that in their return they move respectively to N. E. and S. E. Such is a general account only of those winds which, from their influence at the surface in promoting or retarding the voyages of merchant vessels, have been named the trade winds or trades, and the upper currents of which it has been proposed to distinguish from the lower by naming them the "anti-trades." (See TRADE WINDS.) Where extensive bodies of land come within the tropics, as in case of the southern peninsulas of Asia and the northern half of Australia, which bodies can become more highly heated when the sun is nearly over them than the contiguous tropical seas, it results that, when the sun is on the side of the equator corresponding to such bodies of land, a partial belt of winds will be established within the trade wind region, and for about 6 months toward such land; while during the other half of the year the regular trade winds will prevail. Thus, when the sun is N. of the equator, the surface winds of the Indian ocean blow in a N. E. direction toward southern Asia; and when it is S., the surface winds for a large tract to the N. of Australia blow toward that island, or a S. E. wind results. These periodical reversals of the trade winds, where they occur, are the monsoons. (See MONSOON.) Mr. W. Ferrel, assistant in the nautical almanac office, Cambridge, Mass., contributed to the "American Journal of Science," for Jan. 1861, a very full paper upon the motions of fluids and solids relative to the earth's surface, in which he considers at length the causes determining the places of the periodical winds, and of the belts of calm and of variable winds, upon the globe, showing under a new and more general form the influence of the diurnal rotation, and apparently accounting for some parts of the collective phenomena not previously explained. Mr. Ferrel sets out by generalizing a principle already understood (see GYROSCOPE), namely, that "in whatever direction a body moves, it is always deflected to the right in the northern hemisphere, and the contrary in the southern hemisphere;" but from this he deduces some new and important conclusions. Admitting that what he calls a "deflecting force," by which the results stated are occasioned, is not a true force, he shows that, considering all the conditions of gravity, centrifugal force, unequal temperatures, a circulation of air to and from the tropics, and friction, the greatest accumulation of air and the greatest barometric pressure must occur at about the latitude of 30° on each side of the equator, or a little without the tropics; this accumulation being due to the deflecting force toward the equator arising in consequence of the easterly movement of the upper currents of air, and to a contrary deflecting force from the equator resulting from the westerly movement of the surface air near to and within the tropics. The atmosphere accumulated along these lines, somewhat depressed at the equator, and still more so at the poles, receives a tendency to flow out from under the greatest pressure, both toward the poles and the equator, in both hemispheres. But the greater density at the poles produces independently a tendency from these toward the equator. Between the parallels of greatest pressure and the equator these tendencies combine, and, taken in connection with the westward movement of the advancing air, thus account for the strong surface current that actually exists in these parts, from N. E. and S. E. in the respective hemispheres. But between the parallels of greatest pressure and the polar circles—beyond which latter the cold polar surface current actually predominates—the two tendencies oppose each other, that resulting from the accumulation at the tropics being, up to the polar circles, the greater (and, with other authorities we may add, a portion of the upper current of air probably descending in this part of its course), so that the atmosphere within the temperate zones has a general course toward the N. and E.; or in other words, the prevailing winds in the north temperate zone are, as is known, except where local causes interfere, those from the S. W. and W.; in the south temperate zone, mainly from the N. W.; these in the two hemispheres being sometimes termed the passage winds. Between the trade and passage winds, or at about 30°, and again between the passage and polar winds, perhaps at about 65°, there are also belts of comparative calm. And thus, parted by 5 belts of calm, there are on the surface of the earth 6 zones of winds, 3 in either hemisphere; in the northern, nearest the equator, the trade winds moving mainly to S. W.; next, the zone of irregular or variable winds (the temperate zone), but in which the winds move mainly to N. E. and E.; and thirdly, the region of polar winds, having a general course to S. W.; in the southern hemisphere these courses are respectively to N. W., S. E., and N. W. It follows, also, that beside the general higher current all the way from the equator to either pole, and the partial current in the temperate zones, also bearing from the equator toward the poles, there is a general current from either pole to the equator, which is at the surface in the polar and tropical regions, but which passes between the two former, or at an intermediate altitude, in the temperate latitudes. Mr. Ferrel accounts for the greater quantity of air and barometric pressure long known to have place in the northern hemisphere, on the principle that, there being more land in this hemisphere, the resistances to the current of air are proportionally greater, so that the eastern motion of the air and the deflecting force depending on it are less, the more rapid motions and greater deflection in the southern hemisphere thus serving to throw a larger portion of the air to N. of the equator. Upon like principles are explained the mean position, except over the Pacific ocean, of the equatorial calm belt to N. of the equator; and the fact that in the winter of either hemisphere a portion of its atmosphere is thrown over into the other. Within the middle or temperate latitudes, the effect of the earth's rotation is manifested in another way, lately summed up in Professor Dove's "law of rotation of the wind." It was remarked even by Lord Bacon (*De Ventis*, 1600), and has been since confirmed by Mariotte, Sturm, and other writers in both Europe and America, that the wind has a very common tendency to veer round the compass with the sun's motion, *i. e.*, to pass from N. through N. E., E., S. E., S., and so through W. to N. again, occupying from one to several days in making the circuit, but rarely veering, and probably never making a complete circuit, in the opposite direction. The explanation as given by Dove is, that for any place situated beyond the tropical regions, when the sun is on its meridian, the currents of heated air which proceed from the more heated tropical part of that meridian must arrive at that place from the S. earlier than like currents can arrive at any other place eastward or westward of it on the same parallel of latitude. But as the sun successively becomes vertical to meridians W. of this, the currents of air in tending to describe great circles of the sphere arrive later, and with a tendency to come more from the W. of S.; until, when the sun in the evening is nearly or quite W. of the place, the currents will arrive nearly from the W. When, at midnight, the sun is on the opposite meridian, the current passing over the north pole is felt as a north wind; and later than this, the successive lagging of this movement, as the sun moves over other meridians to its place in the east, gives to the current a motion relatively more from the N. E. and the E.; and the circuit of the winds will be nearly completed when the sun has again reached the meridian of the place. This is the order of changes, when, as sometimes happens, the circuit is completed in a day; but incidental circumstances, as the influence of particular winds, may delay these changes, so that the rotation shall not be completed in less than 3 or more days, or so that for the time it may be wholly arrested. Where the trade wind prevails, such circuit of change cannot occur; in the regions in which monsoons exist, there is in effect one such rotation annually.—The alternating daily winds occurring on coasts and in islands, more especially of the tropical regions, are known as land and sea breezes. The land during the day becoming more rapidly warmed than the adjacent water, rarefaction and ascent of air over the former occurs, and a breeze from the sea blowing inland sets in about 9 A. M., usually attaining its maximum about 2 or 3 o'clock P. M. In the evening, the land begins to cool more rapidly than the water; the air over it becomes the more dense and flows out, giving rise to a breeze from the land to the sea, attaining its maximum a little before sunrise, and then declining rapidly and ceasing, as the heat of the land increases, until the sea breeze again sets in. The periodical winds which blow for a few weeks in summer over the countries bordering the Mediterranean, are those originally named the etesian winds (Gr. ετησιαι, from ετησιος, annual); the name has since been given to other like winds, as those of the coast of Holland. In the Levant these commence about the middle of July, rising at 9 A. M., and continuing only during the day, their direction being from N. E. to S. W. Necessarily, the nature of different localities upon the earth's surface, the contiguity in given places of seas, lakes, mountains, &c., or the relative forms and characters of land and water surfaces, will have much to do with determining the nature of the winds that shall most prevail at such localities; and such natural features will often give a peculiar general direction to the winds prevailing in each locality. Thus, winds are in a degree determined or modified, in all zones, by all marked peculiarities of physical geography, even to that of the existence and direction of ocean currents, as well as also by season; and these remarks apply most forcibly to the temperate zones, in which the force of the normal general current is least, and hence most frequently subverted. Mountainous districts, from their alternations of heated and cool, of rare and dense air, and from the facility with which in them cloud formation and rain are hence caused, are the most frequently subject to sudden and violent gusts of wind; though the islands of tropical seas are liable to be visited with tempests even more furious; and the devastation of tornadoes when they occur in level districts is also greater, from the fact that no sufficient obstacles present themselves to check the forming or momentum of the aërial current.—For the measurement of the force of wind, see Anemometer. An instrument of which no account had been received when that article was written, the invention of Mr. Levi Burnell, of Milwaukee, Wisconsin, is so contrived as to register continually the direction of the wind, its velocity, and the time or hours corresponding to each part of the record; it has hence been named an "anemograph" (Gr. ανεμος, wind, and γραφω, to write). In it a sheet of paper 6 inches wide, and of sufficient length to run half a month, is moved by a clock at the rate of 2 inches an hour under a series of recording pencils, 4 of which are made to indicate the direction of the wind, and a fifth its velocity. Connected with the lower end of the vane rod are 4 eccentrics, one for each of the cardinal points; according as the position given to the vane by the wind brings any one or two of these into play, the corresponding pencils are moved proportionally across the paper, and the distances to which they are thus thrown from a fixed or base line, measured by a scale, determine for each part of the whole record, that is, for each corresponding point of time, the direction of the wind, by giving the number of degrees in which this varies from the nearest cardinal point or points. The clock motion is made to mark the times corresponding alongside the record. Meanwhile, by the force of the wind 4 hemispherical cups are made to revolve, and more or less rapidly according to its velocity; and for each revolution of the cups through a total distance of one mile, a light rod within the vane rod, the latter being hollow, is caused to rise and descend through the space of half an inch. This motion of the rod, being communicated to the 5th pencil, causes it to trace an undulating line on the paper; the undulations represent so many miles of movement of the cups for the time corresponding, and thus directly give the relative velocities of different times. The results obtained by Dr. Robinson, of England, would appear to make the velocity of the cups ⅓ that of the wind; but it is probable that the ratio of the absolute velocity of the wind to that shown by the cups will have to be specially determined by experiments with the instrument, in which, indeed, with the best arrangement and working condition, very little of the motion of the wind needs be lost by friction. Of three anemographs constructed in 1861, for the ports of Milwaukee, Cleveland, and Charlotte, near Rochester, N. Y., the first had already in that year been tested, and with satisfactory results. During the season of storms, the results were published daily; and important benefits to commerce and meteorological science are anticipated from the indications to be obtained from instruments of the sort kept in operation at a considerable number of suitable points. (See also Hurricane, including the subject of cyclonès, Simoom, Sirocco, and Whirlwind.)

WINDSOR, a S. E. co. of Vermont, separated from New Hampshire by the Connecticut river; area, 900 sq. m.; pop. in 1860, 37,195. It is mountainous on the W. border and hilly in other parts, and the soil is fertile. The productions in 1850 were 39,862 bushels of wheat, 312,581 of Indian corn, 224,756 of oats, 613,297 of potatoes, 79,700 lbs. of hops, 1,741,228 of butter, 667,105 of cheese, 589,305 of wool, and 118,865 tons of hay. There were 10 grist mills, 150 saw mills, 22 woollen factories, 3 cotton factories, 3 iron founderies, 37 tanneries, 79 churches, 4 newspaper offices, and 11,695 pupils attending public schools. Granite, limestone, and soapstone are abundant. The county is traversed by the Rutland and Burlington, the Vermont central, and the Connecticut and Passumpsic rivers railroads. Capital, Woodstock.—Windsor, a township and village of the preceding county, is situated on the right bank of the Connecticut river, at the junction of the Sullivan and Vermont central railroads, 77 m. by railroad S. S. E. from Montpelier; pop. of the village in 1860, 1,669. Ascutney mountain, 3,320 feet high, is partly in this town and partly in Weathersfield. The village has 4 churches, a bank, 2 newspaper offices, and a seminary. It is also the seat of the Vermont state prison. The union arms company for the manufacture of guns and machinery have a large factory here. The village is one of great beauty and considerable wealth, and the landscape is one of the most attractive on the Connecticut river.

WINDSOR, a town and village of Hartford co., Conn., lying on the right bank of the Connecticut river, between the towns of Hartford and Windsor Locks; pop. in 1860, 2,278. The town is celebrated as being the first settled in Connecticut. William Holmes, one of the settlers of Plymouth colony, with a number of associates, in Oct. 1633, erected a building on the banks of the Connecticut, just below the mouth of the Farmington or Tunxis river, and fortified it strongly with palisades. It was intended only for a trading fort, but the company subsequently brought their families there, and established a permanent settlement on the rich lands of the Tunxis valley. The town was originally of great extent, but 4 or 5 towns have been taken from it. Its population is almost wholly agricultural.—The large manufacturing village of WINDSOR LOCKS, situated on the Connecticut river, 12 m. above Hartford, and on the Hartford, New Haven, and Springfield railroad, was formerly in this township, but is now incorporated as a separate town. It has several paper mills, iron founderies, silk factories, &c.

WINDSOR, or NEW WINDSOR, a parliamentary borough and parish of Berkshire, England, situated on the brow of a hill above the right bank of the Thames, 23 m. S. W. from London, with which it is connected by railway; pop. of the borough in 1861, 9,827. The Thames is crossed here by an iron bridge, which connects Windsor with Eton. The town has a public ground on which is an obelisk, a handsome town hall, 2 churches, 3 dissenting chapels, 2 libraries, 2 hospitals, a dispensary and several other charitable endowments, a number of charity and other schools, infantry barracks, and a theatre. The only manufactories are breweries.—Windsor castle, the principal residence of the English monarchs, is situated E. of the town. The buildings cover 12 acres of ground, and are surrounded by a terrace on 3 sides 2,500 feet in extent, and faced with a rampart of hewn stone with slopes at convenient intervals down to the "Little park," which surrounds the palace and is about 4 m. in circumference. Connected with this by a long avenue of trees on the S. side of the castle is the "Great park," 18 m. in circuit, abounding with forest scenery and well stocked with deer. West of this park lies Windsor forest, 56 m. in circumference. In the Little park is "Herne's oak," mentioned by Shakespeare. The Great park has at the termination of the "Long Walk" a colossal equestrian statue of George III. in bronze by Westmacott. Windsor was a residence of the Saxon kings before the Norman conquest, but the present castle was founded by William the Conqueror, and almost rebuilt by Edward III., under the direction of William of Wykeham, and again in 1824–'6, under that of Sir Jeffrey Wyatville. St. George's chapel, in which the knights of the garter are installed, is an excellent specimen of the florid style of Gothic architecture. In the royal vault connected with the chapel, Edward IV. and his queen, Henry VI., Henry VIII. and Jane Seymour, Charles I., George III. and his queen, George IV., the princess Charlotte, the duke of Kent, the duke of York, William IV. and his queen, and other members of the royal family are interred. The keep or round tower of the castle was sometimes used as a place of confinement for royal prisoners, and James I. of Scotland was confined in it. The state rooms and corridor of the castle contain a large number of choice paintings, groups of statuary, &c. Frogmore, the favorite residence of the late Queen Charlotte and afterward of the duchess of Kent, is ½ mile from Windsor. The borough sends 2 members to parliament.

WINDWARD ISLANDS. See WEST INDIES.

WINE (Heb. *yain;* Gr. οινος; Lat. *vinum;* Fr. *vin;* Ger. *Wein*), originally and properly, the name of the liquor obtained by fermentation of the juice of grapes; but, in later and less strict usage, denoting also certain beverages prepared in a similar manner from the juices of many other fruits. The mention made of wine in Genesis and other of the earliest written books of the Old Testament, is such as to imply that at the periods to which they refer it was already familiarly known. Indeed, from the abundance of the grape in those regions which appear to have been the earliest abode of man, in connection with the facts that its plentiful juice would naturally offer itself as a refreshing drink, and that fermentation spontaneously taking place in any portion of this that might be long preserved would directly develop wine, the discovery of the making of wine and of its effects must have occurred at an extremely early period in the history of the race. According to certain traditions, the vine (*vitis vinifera*) had its origin in India, and was thence disseminated to Asia Minor, to northern Africa, and to Greece and other countries of Europe. The earliest wines were doubtless in all cases simple and pure, being obtained by mere expression and fermentation of the grape juice; but modifications in the way of increasing the saccharine element by partial drying of the grapes, and of aiding the development of alcohol by heat, began very early to be introduced. Among the Greeks and Romans certain leaves or aromatic substances were infused in the expressed grape juice, or "must," for the purpose of imparting their flavors to the wine; and additions were sometimes made of salt, and of turpentine or other resins, the estimation in which these last were held being shown by the placing of the pine cone along with clusters of grapes in the *thyrsus* of Bacchus. In other instances, in order to give body and flavor to certain wines that would otherwise be thin and poor, a portion of must concentrated by boiling was, as at the present day, added to the fermenting juice. The effect of age in maturing wines and heightening their quality was also early understood. Homer speaks of wine in its 11th year; Athenæus and Horace commend wines of greater age; and Pliny relates that he had drunk of that which was 200 years old, and which was thick and of harsh taste. The inferior wines were often used directly from the casks in which they were fermented; others were drawn off for keeping into earthen jars or wooden vessels; while, at least in later times among the Romans, the finest sorts were kept in flasks of glass. In the countries of the East, wine appears to have been transported chiefly in bags made of goat skins, and commonly also to have been kept in bottles of like material. Homer names two wines as highly celebrated in his time among the Greeks: the Pramnian, from grapes grown near Smyrna, and a wine from the Thracian Ismarus, which he describes as "luscious, pure, and worthy of the palate of the gods." At a later period, Lesbos, Chios, Cyprus, and other localities in and about Greece, but especially the slopes of Mt. Tmolus, furnished choice wines. Of Roman wines, the earliest noted was the Cœcuban, from near the site of the modern Fundi; and next, the Setinian, from the hills of Setia, above the Pontine marshes. The Falernian, however, so named from the district on the banks of the Volturnus in which it was produced, and upon which Martial bestows the epithet of "immortal," became the most celebrated of all the Roman wines; this was deemed fit for use only after the 10th year; its color was a very light amber, and its strength is intimated by the fact stated by Pliny, that it was the only wine known to him which upon the touch of a flame took fire. The Romans at this period regarded the wines of Italy as the finest in the world, the district most productive of these being the volcanic region of the Campania, including Fundi and Sorrento. From the account of Pliny, who devotes to the subject an entire book of his "Natural History," it appears further that the wines of Germany and Gaul had not at this time attained to any celebrity abroad, though Gallia Narbonensis was already notorious for the manufacture of spurious compounds in imitation of wine; while to Spain he credits rather abundance than choiceness of vintages; and the wines of Africa he pronounces generally acid and thin. Columella, Virgil, and Athenæus also give prominence to the culture of the vine and the qualities of wines; and in the reign of Constantine VII. a compilation was made, in the "Geoponics," of all that had been written upon the vine from the 1st to the 4th century of our era. It is remarkable, however, that scarcely one of the localities famous in Pliny's time for their superior wines produces at the present day a wine that is deservedly celebrated. The change has been in some instances due to a gradual neglect of the processes of cultivation and manufacture, but oftener probably to those slow modifications of the condition, soil, and climate of portions of the earth's surface, resulting in part from removal or new growth of forests, drainage, and other artificial agencies, and in part doubtless from scarcely noted vicissitudes going forward in the physical condition of the globe. In the mean time, however, the grape and wine making have in some degree extended to almost every portion of the earth in which the vine will flourish, including the islands of the Atlantic, Mexico, Australia, and parts of the United States and South America. In reference to the cultivation of the vine, especially of those varieties peculiar to the United States, see GRAPE; and for certain subjects directly related to the production of wine, see ALCOHOL, BRANDY, DISTILLATION, FERMENTATION, TARTARIC ACID, and YEAST.—It is unquestionably true that the constituent substances entering into and forming the juice of the grape are present in somewhat different proportions in the product of every variety of the vine; while it is highly probable also that of the components never present in more than very small quantity a part may be entirely wanting in the juice of some of the varieties. The number of varieties of the vine, at least in countries of the old world, may be judged of from the circumstance that in 1799 Chaptal was able to collect in the garden of the Luxembourg 1,400 which were then raised in France alone; though, of course, of comparatively few of these only was the cultivation general. Moreover, the composition of grape juice varies not only with the variety of the vine, but among other circumstances also with the climate, the soil, the nature of the manures where any are applied, the aspect and exposure of the vineyard, the character of the seasons, and the stage of partial or complete ripeness at which the gathering takes place. As is well known, the colors of different varieties of grape vary from black, through dark purple and red of various tints, to white. The darker-skinned grapes are found to be, as a rule, inferior to the lighter red and white, not only in sweetness, *i. e.*, in the amount of sugar they contain, but also in fragrance and flavor. These differences, which had been customarily ascribed to the species of the vines, Mulder considers as in the main due to direct influence of the colors of the grape skins upon the absorption of the solar rays. Thus, the light of the sunbeam obviously enters the grape more abundantly as the color of the latter is nearer white; and to the light rather than the heat Mulder ascribes the development of sugar in the pulp. On the other hand, heat will be absorbed by the grape more largely in proportion as its surface is darker colored; and since heat is known to promote chemical changes in the way of decomposition, it thus probably destroys a portion of the volatile flavoring matters of the fruit, or prevents their formation. But whether grapes be externally black, purple, red, or white, their juice is always, probably without an exception, colorless. In view of the variableness of the constituents of grape juice, it will readily be understood that as yet, although careful analyses have in certain instances been made, its composition is rather generally and approximately than specially or precisely known.

Beside water, which necessarily forms the larger percentage of the juice, Mulder finds as its constituents sugar, gelatine or pectine, gum, fatty matter, wax, albumen, gluten, and tartaric acid, both free and combined with potash, soda, and lime; while generally, or in certain cases, small quantities also are present of racemic, malic, and perhaps citric acid, alumina, oxides of manganese and iron, sulphates of potash and soda, phosphate of lime and magnesia, and probably silica. Among peculiar constituents present in the skins, are tannic acid and coloring matters; in the seeds, a fatty oil which can be separately extracted. The entire solid matters of the juice, the larger portion being sugar, may mount up in very ripe grapes to 40 per cent.; but most commonly the proportion is much less than this. The sugar is found to range from 13 to 30 per cent. of the weight of the juice. It is possible that the above analysis does not include the peculiar matters which give to the grape its odor and in part its flavor, and which, beside being volatile, are present in very small quantity.—The vinous or alcoholic fermentation, that which is always first to occur in the grape juice, requires the presence of grape sugar dissolved in the water of the juice, as it naturally is; of a ferment, or substance capable of originating molecular change in the sugar; and in the outset, or perhaps throughout the process, also of oxygen (existing in the air). The essential change going on in the juice, in its fermenting, is the conversion of a portion of the sugar, less or more, into the two products, alcohol, which chiefly remains in the liquid, and carbonic acid, which usually escapes. If grape sugar, on the point of fermenting, have the composition below given, then the whole process may be represented chemically as a splitting of each atom of the sugar into 2 atoms of alcohol and 4 of carbonic acid; thus:

$$\underbrace{C_{12}H_{12}O_{12}}_{\text{1 grape sugar.}} = \underbrace{2C_4H_6O_2}_{\text{2 alcohol.}} + \underbrace{4CO_2.}_{\text{4 carbonic acid.}}$$

The beginning of fermentation in the grape juice, within a short period after it has been expressed, is shown by the rise through it of small bubbles of the gas just named; and while the liquid becomes more turbid, as the bubbles ascend in greater quantity they form a froth upon its surface. Meanwhile, the sugar of the juice diminishes, and alcohol takes its place; and the liquid gradually becomes more clear, by rejecting both in the froth and in the way of subsidence certain matters which, owing to its less viscid character and the presence of alcohol, it can no longer hold suspended nor in solution. Often this process continues for some months, the liquid being at intervals drawn off to free it of so much sediment as has fallen; when fermentation is completed, or in some instances a little before, it is transferred to casks to be stored, or at once exported. The gluten, and perhaps the albumen, of the grape juice, being nitrogenous bodies, and dissolved in a liquid of which the temperature is ordinarily not very low, these substances by union with the oxygen of the air are first to undergo change, beginning in fact to experience putrefactive change; it is these substances in this condition (see FERMENTATION) that serve to break up the union of the elements of sugar, and thus determine the generation of alcohol. But if the supply of oxygen be at any point in the process completely cut off, the decomposition of gluten and albumen must cease, and the ferment will also cease to be formed; while, on the other hand, such is the nature of fermentation, that a given consumption of the ferment is required to break up a given quantity of sugar; so that, if the former ceases at any time to be generated, the formation of alcohol will be discontinued, and the sugar yet unacted on will remain as such in the liquor. These facts go to disprove the assertions sometimes made, that the access of air is only necessary to originate the fermentation, and if thereupon the air be wholly excluded the change will continue unchecked. The extent to which the must will go on fermenting if immediately bottled or put in casks, endangering the bursting of these, depends on oxygen already in the liquid. But the practical deduction from the principles stated is, that wine which has nearly passed through fermentation will not, if then bottled, go on, as it is often believed to do, to develop a larger percentage of alcohol through a number of years; and this view is that insisted on by Mulder, who accounts for the comparatively strong character of bottled wines by the simple circumstance that, as a rule, it is the stronger sorts only that are selected for preservation in this way. Now it has been found that, in the juice of all grapes, the amount of ferment material is nearly or quite the same; while on the other hand it is well known that the quantities of sugar and of acids vary greatly. In those varieties of the grape in which—and this is the case particularly with those grown in the warmer climates—the sugar is present in very large proportions, the supply of ferment is exhausted before the sugar is all changed; and the portion of sugar thus left in the wine renders it sweet, as in the wines commonly known as sweet or "fruity," or as *vins de liqueur* (not artificial). Of such wines, Tokay, Frontignac, Constantia, and Malmsey are examples. The excess of sugar in a wine also acts commonly to preserve it against the acetous fermentation; so that muscadine wine has been kept for 200 years, and Tokay at the age of a century is in its perfection. But in grapes in which, as is common in the cooler vine-growing latitudes, the proportion of sugar is small, this may be wholly decomposed and replaced by alcohol by the time the ferment is exhausted, or even before. The wines then produced are characterized by the alcohol, acids, and flavor without sweetness, and are called "dry." Sherry is one of the best examples of this sort. In cases in which the sugar is exhausted before the ferment, the practice of adding to the fermenting must another portion which has been greatly concentrated by boiling is often resorted to for the purpose of supplying the deficiency; and a wine otherwise dry and acid may thus be converted into one that is sweet. But in the higher latitudes, and with the juices of other fruits than the grape, it has been more common to add to the must a quantity of sugar, especially of late years starch sugar; this may serve to consume all the ferment, generating of course more alcohol, and perhaps still leaving an excess of sugar; so that a wine thus treated is always stronger than otherwise, and may also be sweet. If, after the sugar present in the must or added to it is exhausted, there is still a portion of ferment remaining in the wine, or if fermentation is purposely arrested while such is the case, then this ferment is liable, and often for a long time, to set up the acetous fermentation, or change of the alcohol to vinegar, whenever the conditions favoring this change occur; these conditions are access of air to the wine, and the rather high temperature required to cause the action of oxygen upon the alcohol. Wine which begins in this way to acetify, is said to be "pricked." The addition of more sugar in such case, often resorted to with a view of arresting this change, is very apt to hasten the decomposition. The preferable plan is to remove the wine immediately to a very cool place, as a cellar, and to leave it at rest for some time with limited access of air; the ferment may thus be gradually oxidized and destroyed, without the formation of acetic acid. If in a barrel or cask of wine a small quantity of air be allowed, the burning of a small quantity of sulphur in this space will form sulphurous acid, which being then enclosed will slowly take up the oxygen of the air or in the wine, and so tend to prevent acidifying; or a small quantity of sulphurous acid may be directly introduced. These methods are particularly resorted to in hotels or other places where wine is drawn from casks, and the air is necessarily admitted at the same time. So long, however, as the temperature of the must has not been allowed to become too high, and the sugar in solution is not exhausted, there is little danger of the acetous taking the place of the vinous fermentation; and while in such cases air may be nearly excluded, measures of the sort just named are seldom required in the way of precaution. Mulder calculates that 198 parts of grape sugar, no loss being supposed, will give 92 parts of alcohol (*i. e.*, by weight), or nearly in the proportion of one part of the latter to two of the former. But beside the varying percentage of sugar in the must, the facts that a portion of it may continue unchanged, and that during fermentation more alcohol than water is likely to evaporate, render it impracticable to predict in given cases what proportion of alcohol the wines produced shall contain. The exciting and intoxicating qualities of wines result, of course, from the presence and amount of the alcohol developed in them. Wines having a large percentage of alcohol, as port, sherry, &c., are termed "strong" or "generous;" those having comparatively little alcohol, as claret, sauterne, &c., are termed "light" or "weak" wines.—Having thus presented the constituents of the grape juice, and traced the essential change taking place in it in the production of wine, namely, the conversion of sugar to alcohol, it will not be difficult to deduce, in a general way, the reasons for the differing compositions actually presented by the different species of wine. That this can only be done generally, is evident not only from the many sources of variability in the juice itself already mentioned, but also in view of such causes as the mixture of the perfect fruit with more or less that is unripe or decayed, the fluctuations of temperature that may attend the fermenting process, and so on; consequences of which are, that wines even from the same variety of vine, and in different years from the same vintage, may be exceedingly unlike in character, and that as the rule the composition of wines, even if pure, is far less subject to precise knowledge or determination beforehand than is that of the grape juice. While alcohol is forming, some of the components of the juice entirely or nearly disappear in the froth or sediment, and others are chemically changed, resulting in the production of new compounds. If we except for the moment the volatile matters, the ingredients most influential in determining the well known differences of wines are the sugar, alcohol, tartaric acid, coloring matters, and water. Since, as previously stated, the juice of all grapes is colorless, it follows that when the expressed juice, separated wholly from the pulp and skins, is fermented alone, the wine will be perfectly colorless, or that known as "white," no matter what may have been the color of the grapes used. White wines will necessarily at the same time almost or wholly lack tannic acid, which is present in the skins. But if the crushed grapes and juice be left to ferment for a time together, however light the former, the liquor will acquire some color (at the least a tinge of amber); and the color will be deeper, to the very dark red of such wines as port, according as the skins of the grapes were of darker color, or as the time during which they remain in the fermenting juice is prolonged. Thus, natural color in wines is always that extracted from the skins of the grapes in the vat, and is not, as often supposed, due to the choice of purple grapes. But the presence of color will, for the like reason, always be attended with that of tannic acid, so that in some degree the colored wine will be rough or astringent; and the degree of astringency due to this cause will usually be proportional to the depth of color, a fact of which port wine also affords a marked instance. Alumina is said to be detected chiefly in the red wines, and in some of them also a trace of iron. The other free acids are such as named in stating the composition of the juice, tartaric being generally the most abundant; in soured wines, including those that have become musty or hurt with age, acetic acid is also present. Wines bottled while the process of fermentation is going on will also contain carbonic acid gas, and will in consequence, if drunk immediately on uncorking, have the quality of "briskness;" where the quantity of the gas is considerable, such wines sparkle when agitated in the light, and they are then distinguished as "sparkling" or "effervescing;" wines containing carbonic acid, but which do not sparkle, are distinguished as "still." Wines always contain less of tartaric acid than the grape juice they are obtained from, owing to the circumstance that during the generation of alcohol the tartrates in the juice, and mainly the tartrate of potash, become insoluble and are thrown down; the considerable masses of nearly pure tartrate of potash thus found in the bottom of the vat or cask are an important source of that salt in commerce, and pass under the name of wine stone, crude tartar, or argol; the slight further deposition that may take place after bottling is known as "crust" or "bees-wing." The presence of a free acid in the juice appears to be necessary to the development of the fungus with which the progress of fermentation is attended, to the evolution of the perfume, to the agreeableness of the wine, and, if of the right character and not excessive, also to its wholesomeness. Of the best Rhine wines, the acid forms about .005 part, or ½ per cent. Formic and glucic acids are said sometimes to be present, particularly in wines made in wet seasons. In wine from unripe grapes, citric acid may sometimes be found. Oxalic acid, the most hurtful of all, is probably never a constituent of ordinary wines; but it occurs in large amount in a spurious wine made from rhubarb. Of all acid constituents, the tartaric is that which is most agreeable and wholesome. That quality in wines which in liquids generally would be known as flavor, must depend mainly in the former on the acids, sugar, and alcohol; but the fragrance and an important part of the actual flavor of wines are due to the presence of some peculiar volatile matter, the effect of which is technically distinguished from the simple flavor, and which is known as the perfume or *bouquet* of the wine. The nature of this odoriferous principle is still not satisfactorily known. According to Fauré, it is a viscid substance diffused in the liquor, and which he terms œnanthine. According to Liebig and to Winckler, it appears rather to be or to contain a peculiar ether, or a volatile fragrant acid; to the former the name of œnanthic ether has been given. Water is more abundant in wines made in wet seasons, and in the wine from new vineyards or young vines; of course also in wine from any grape in which the proportion of sugar is very small. Weak wines are more prone to become sour; and it was to avoid this result that the ancients resorted to various means of thickening their wines; the modern practice of increasing the strength by adding starch sugar, and if need be yeast also, is preferable in every way, unless the increased percentage of alcohol be considered the more objectionable result.—The quantity of alcohol in different wines, and in different vintages of those of the same kind, and also the modes by which it is to be ascertained, have received considerable attention from analytical chemists; but since the specific gravity of wines depends not merely, as in brandy or dilute alcohol, on the proportions of alcohol and water, but also on the other solid matters contained in them, no means have been devised of a less tedious character than the actual distillation of the spirit from a portion of the wine, and the determining afterward of the proportion it must have formed in the whole. Simplified apparatus for this purpose has been produced, but even with this accurate results are difficult of attainment; and for the reasons above given, the application of the hydrometer (see HYDROMETER) as a means of determining the proportion of spirit is little to be relied on. The analyses of the same wines by different chemists, naturally enough, afford considerable diversity of results; and remembering that no analysis can determine what the percentage of alcohol is to be in a wine to which brandy or spirit is added in variable quantities, or in any quantity by the importer and vender, the table furnished by Brande, in 1811–'13, may still with little alteration be received as affording a fair indication of the average alcoholic strength of wines most commonly known; a few of these are given in the following table:

PERCENTAGE OF ALCOHOL IN WINES.

Lissa	25.41	Tinto (red French)	12.32
Port, maximum	23.92	Burgundy, maximum	12.32
" minimum	19.82	" minimum	11.00
Madeira, average	20.25	Graves (Bordeaux)	11.84
Constantia	18.29	Champagne, white	11.84
Lacryma Christi	18.24	" red	10.64
Sherry, maximum	18.37	Rhine wine, maximum	13.31
" minimum	17.00	" " minimum	8.00
Lisbon	17.45	Tokay	10.46
Hermitage, white	16.14	Nice	13.50
Malaga	15.98	Shiraz	14.40
Roussillon	15.96	Frontignac	11.80
Bordeaux (claret), max.	15.11	Malmsey	15.20
" " min.	11.95	Bucellas	17.10

The analyses of Christison assign lower proportions than the above for almost all wines, and especially the stronger, reckoning port, for example, at an average of about 16.2. Mulder, in summing up on the subject, says: "Port is the richest in alcohol, Madeira ranks next. Liqueur wines, as a rule, are stronger than red wines. Jurançon, Lacryma Christi, Benicarlo, and Sauterne contain from 12 to 15 of alcohol, or more. Red French wines contain less, from 9 to 14 per cent.; good Bordeaux, 9 to 11; champagne, 10 to 11; and Rhine wine, 6 to 12—generally, 9 to 10 per cent."—The geographical range of the grape is very extensive. In the eastern hemisphere, excepting perhaps the colder eastern coast and central regions of Asia, it is from about lat. 54° N. to 45° S. The eastern portion of the American continent being also colder than its western shores, the limit of successful vine culture in the former is probably about lat. 45° N. The grape does not, however, through this entire range produce a large enough percentage of sugar to be capable of fermenting into a sound good wine. In the hotter latitudes alone can it yield the richest sweet wines; and while such as are tolerably good are already made at the Cape of Good Hope and in Australia, wines of the best quality in Europe are not produced above lat. 51° N. Though the wines of the United States are as yet mostly quite unlike to their prototypes of the old world, they are improving in the hands of a few special cultivators; and in view of what is already accomplished, it is reasonable to anticipate that here really good wines may yet be produced up to lat. 42° or 43° N. As an illustration of the effect of climate and situation, the Muscat grape matures on the Rhine only so far as to be fit for the table; while in the south of France it furnishes the rich Frontignac, Rivesaltes, and other sweet wines. So, the same variety of grape which on the Rhine yields the well known Hochheimer, near Lisbon affords the almost wholly different Bucellas, at the Cape the Cape hock, and formerly at Madeira the delicious Sercial, neither of which latter bears any distinct resemblance to the true Rhenish. Meyen declares that grapes of the same variety, if cultivated at different elevations upon the side of a mountain, yield essentially different wines. The statements already made sufficiently imply that it is not latitude, but the course of the isothermal lines, that so far as temperature is concerned determines the fitness of the grape for wine making; but even within the same belt of equal temperatures, the predominance of cloudiness and humidity of the air is the condition, next to cold, the most unfavorable to the perfecting of the grape, as that of a generally clear sky and dry air is the most favorable. Thus, with the same latitude and a nearly similar temperature, good wines are produced on the Rhine between Coblentz and Düsseldorf, though from the grapes of Belgium and the south of England they cannot be had. But the influence of judicious cultivation and manufacture is doubtless among the most efficient of all. The celebrated Johannisberger wine is produced upon an elevation of 150 feet above the Rhine and the country adjacent; but the Johannisberg estate and a few near to it belong to large proprietors, who bestow upon their business an amount of care and skill far exceeding that shown as a rule by the owners of the small surrounding vineyards; the result is a very great superiority in the wines produced by the former. Upon the large estates, three successive gatherings are made of the grapes as they mature; but the finest product is from the summit of the hill, close to the castle upon it, where the vines are peculiarly sheltered from winds; and upon this hint, since 1824, in addition to the protection of the castle wall, the whole upper vineyard has been surrounded with a stone wall 10 feet high. Indeed, a quiet state of the air about the clusters on the vine is found to be one of the most effectual means of securing a perfect maturity and quality of the grapes; and on a small scale, the same principle is shown in the way the ripening of single clusters is forwarded by tying thin muslin bags over them upon the vine. At Hochheim, the belts of vineyard so situated as to be the most completely sheltered from agitation by winds, are those the produce of which brings by far the highest prices. Advantages of certain vineyards at Rüdesheim are also found to be that, beside being protected by their situation upon a steep southerly slope, and also by a high forest, the air between the close rows of vines on the successive terraces is kept very still, and, through radiation from dark-colored stones covering most of the surface, it is even during the night almost as hot as if in a conservatory. In regard to soils, the Montillado and Manzanilla of Spain do not greatly differ in taste or flavor, though the former is from a white soil, containing 70 per cent. of carbonate of lime, with alumina, silica, and magnesia, and the latter from red and sandy hills. Chaptal and other writers on the subject are of opinion that for the vine the physical are more important than the chemical qualities of soils; and that provided the earth is porous, free, and light, its components are of less consequence. An advantage of calcareous soils, accordingly, is that they readily imbibe rain, and thus maintain a dry and clear atmosphere about the vines. Certain peculiar strong-smelling substances in the soil are likely to impart their unpleasant odor to the wine it produces, an example of which occurs in some lands in Germany in which the *Stinkstein* (a variety of subcarbonate of lime) is present. The vine growers of France and Portugal are strongly averse to manuring their vines; and in the port district of the Alto Douro the practice is forbidden by law. But the German cultivators manure very freely, with no ill effect upon the quality of the wines, which in fact are generally esteemed for their bouquet. The manuring is practised every 3d or 4th, or up to the 10th year; fresh cow dung is used in some instances, but oftener strips of woollen previously soaked in liquid manure and dried; and the practice is more common with the red than the white grapes. Among the best of manures are the cuttings of the vine, applied as often as they are pruned, since these restore to the soil a portion of the alkalies abstracted by the vine and so necessary to the fruit. The composition of the grape juice shows that potash in considerable quantity in the soil is essential; and in this country, the burying at intervals of a few years of the carcasses of dead animals near the roots of vines, or the incorporation of ashes with the earth about them, is said to have had a remarkable effect, at least in promoting the quantity and quality of the grapes.—For information upon the most commonly known species of European wines, the reader is referred to the titles Bordeaux Wines, Burgundy Wines,. Champagne, Hochheim, Johannisberg, Madeira, Malaga, Malmsey, Port Wine, Sack (antiquated), Sherry, and Tokay. In the articles Champagne and Port Wine, accounts are given of the peculiar methods adopted for their production. In reference to certain native wines of the United States, with the usual mode of preparation, see Catawba Wine. A general account of the modes adopted in Europe for red and white wines will here be added. For a brisk wine, as champagne, the grapes are gathered when not fully ripe, and may be gathered in foggy weather or when wet with dew; for all other kinds, dry clear weather is preferred. The German wines being naturally very dry, it has of late years been found best to gather the grapes as late as practicable, much of the acid being thus got rid of, and all the sugar developed. For the *vins de liqueur* of Spain and at Tokay, the grapes are left very long on the vines, and by twisting the stalks the access of fresh sap is checked, and evaporation from the grapes allowed, until they shrivel and appear like raisins. The very sweet wines, such as those of Cyprus and the original Malmsey, are produced by previously boiling the must to a considerable degree of thickness. In respect to ripeness of the grapes, the two extremes of too early and too late gathering are to be avoided; as in the latter case the decay of the fruit will render it worthless or injure the product, and in the former the wine is likely to be "raw," and to have a hard, acid character when old. The wine from over-ripened grapes is also that with most difficulty kept from souring. The case of claret may be selected as an illustration of the mode of making the red wines generally. The wine vessels being made ready, and the grapes having reached on the average the maturity desired, the latter are gathered and picked, setting aside unripe, withered, or rotten bunches, in fact all that might injure the quality of the wine. Selecting then the best fruit, this stripped from the stalks is put into what is called the mother cask, to a depth of 15 or 20 inches; the former practice was then, without treading the grapes, to pour over them about 2 gallons of cognac brandy; then a similar layer of grapes and addition of brandy, and so on, until the vat was properly full; adding finally spirit in the proportion of 4 gallons to a vat of 30 to 36 tuns, and, if the grapes were deemed inferior, in larger proportion. Another and more recent practice, as already stated, is to add starch sugar to compensate for any lack of saccharine matter in the fruit. The mother cask being filled, it is well covered with blankets to exclude the air, and thus left for 3 or 4 weeks. About this time, by means of a small brass cock at about ⅓ the depth of the cask from the bottom, the juice is occasionally tried, to observe the progress of the fermentation, and to learn when, the effervescence having subsided, it may be racked off and put into casks, which are prepared by scalding and rinsing with a little alcohol. The indication of fitness for such transfer is that the liquid has become cool and tolerably clear. Meanwhile, the grapes remaining at the first, and the gatherings subsequently made, are in suitable quantities trodden in the press and put with their stalks into other vats, in which the fermentation is allowed to proceed spontaneously. In each of these 12 to 15 inches depth at top is left for the rising of the frothy liquid during fermentation; even then the vintage may sometimes overflow. These vats as filled are lightly covered, and are inspected twice daily. Often, in from 8 to 12 days, the fermentation has so far subsided that the wine may be racked off; from the danger of its acquiring a taste of the stems, it should not be left too long; but if racked off too soon, the wine may work too much in the barrel, and may fail to keep. The barrels are about ⅔ or ¾ filled with the wine from these secondary vats, and finally at the proper time are completely filled by adding to each sufficient from the mother cask for that purpose; while, as some loss occurs in the barrels by fermentation and evaporation, they are replenished as occasion requires from the same source. The casks remaining at length quite full, they are left some days with but a stone or block over the bung-hole, still being filled as required, and after they are bunged they are replenished every 8th day, until the wine is in a state to allow the cask to be kept with the bung-hole at the side, usually a period of some 18 months. In the making of white wine, after the grapes are trodden, the stalks are separated, and if the skins are colored these must also be removed, and the portion in either case remaining is put into casks, and allowed spontaneously to ferment. When the fermentation has ceased, the wine is racked off into barrels, and these are to be frequently replenished, as in the former case. For either sort of wines the fermentation in the vats sometimes continues much longer than the periods above indicated. If the vintage has succeeded, the wine, according to the criteria laid down by Cavoleau and Jullien, should be clear, transparent, and of a fine soft color; having a lively odor and a balsamic taste, slightly piquant, but agreeable, inclining to that of the raspberry, violet, or mignonnette; filling the mouth, and passing without irritating the throat; giving a gentle heat to the stomach, and not getting too quickly into the head. The wines obtained by the processes now described, it must be remarked, would be highly simple and pure; but in fact, wines are seldom thus simply and conscientiously made. An almost endless number of devices is resorted to for the purpose of heightening natural qualities, or of imparting those which the best wine should possess to products otherwise very inferior, or finally, as declared in evidence before the committee of the English house of commons in 1852, for producing a factitious and unnaturally strong wine for exportation, simply because the taste of the consumers is known by the vintagers to be artificial, and unsatisfied with the natural product of the grape. In fact, apart from the worse forms of adulteration, the modifications of and departures from natural wines occur mainly in those intended for exportation; so that simple, pure, and comparatively unexciting wines are, as the rule, enjoyed only by the inhabitants of the wine-producing countries. To such an extent is this tampering carried, that it may safely be said that no natural sherry or port wine whatever comes to this country or to England; though it is doubtless true that the lighter wines, such as the sorts known as claret, and the Hungarian, German, and other white wines, generally approach in various degrees much more nearly to genuineness. (See ADULTERATION.) It may be added, that the fermentation is more prompt and satisfactory as the quantity of must in the vat is greater; and that the covering of the vats, by preventing the escape of the carbonic acid, alcohol, and aroma, tends greatly to preserve the proper strength and quality of the wine. The addition of brandy or alcohol, even before or during fermentation, does not appear to lead to its thorough incorporation with the wine; and while it renders the latter more harsh in taste and more intoxicating, it also destroys mainly the proper flavor and bouquet of the wine, rendering it otherwise flat, and assimilating it to the distilled liquors. Whenever two distinct wines are mixed, the fermenting process is in a degree renewed in the mixture, which is thus technically said to "fret." But since a homogeneous and durable wine is most commonly the result of this process, the mixing of given wines is often resorted to in practice, the change accomplished by their union being known as "fretting-in."—After wines are regarded as completely formed, and are finally stored in barrels or in bottle, there are still certain changes that go on in them, resulting in gradual alteration of their sensible qualities, and usually in a favorable manner, and the general effect of which is that improvement of the taste and perfume so well known as developing itself with their increase of age. Although the formation of alcohol must in such case early cease, the changes of color and flavor are often marked. In sound wines, especially those having a fair quantity of tartaric acid, the odoriferous principle is gradually and more distinctly developed, while the taste becomes more homogeneous and bland. Meanwhile, most liqueur wines become darker in color; and the same is true of Medoc, and some of the other lighter red wines; but wines rich in tannic acid, as port, throw down some of their coloring matter, and become lighter. Bottled port also slowly precipitates tartrate of potash, forming the bees-wing or crust upon the bottom. Hence, to give the appearance of age to port, some of this substance and a portion of white port are added to the contents of each bottle; while to imitate age in clarets, a portion of the black wine of Cahors is added. Sulphurous acid should not be used for fuming the casks for red wines, nor if practicable for preserving them, since it is a powerful bleaching agent, and destroys or impairs their color. For determining the color of red wines, dealers employ a small silver tray or saucer, slightly raised in the middle; and the depth of color is judged of by observing the wine as it is made to move over this raised portion. But certain wines, among them those made from over-ripened grapes, and those generally which have much sugar and little tannic acid, are incapable of improving by age; while both these and such as retain an excess of albumen or ferment tend to turn acid, or otherwise to decompose and spoil. Beside, wines containing free sugar and too little tannic acid are liable to deteriorate by the forming in them of what is called "ropiness," and which consists of a vegetable mucus developed from the sugar; and the most perfect wines in bottle may be seriously injured or spoiled, by the gradual communication to them of a mouldiness arising from the growth of mould plants from the outside of the cork and through it to the inside—a mischief known as "corking."—The cultivation of the vine engaged to some extent the attention of the earliest settlers of the North American colonies; plants being introduced into Virginia and vineyards commenced there in 1620, while in 1630 French vintagers were induced to remove thither and to undertake the making of wine. Vine culture was common in Delaware in 1648, and was begun near Philadelphia by William Penn in 1683. The first permanent success in wine making, however, appears to have been attained by French and Swiss settlers in Illinois, Indiana, and Missouri, by whom considerable quantities of a palatable red wine were made from the native or wild grape of those regions. Further experience having led to the belief that, at least in the eastern parts of the United States, a good wine could not be produced from vines imported from Europe, these have in that portion of the country been entirely abandoned (see "Report of the Commissioner of Patents," 1857); and attention has accordingly been wholly directed to the availableness of the native grapes for such purpose. South of the northern line of Virginia, the scuppernong (*vitis vulpina*) is found to be the wine grape best suited to the climate; while north of that line, the numerous varieties of the northern fox grape (*V. labrusca*), but especially thus far the Catawba and Isabella, are preferred; though among newer varieties it is anticipated that the Delaware grape will prove peculiarly valuable for wine making. Wine is now produced in some quantity in almost every one of the United States, those yielding the largest amounts being Ohio, California, Kentucky, Indiana, and New York. (See CATAWBA WINE; and for the quantities of the native wines produced in the several states, in the years 1850 and 1860 respectively, see UNITED STATES, vol. xv. p. 792.) Though it may possibly be true that the wines of California are less simple and wholesome than those of the easterly states, it is also certain that in character and flavor they more nearly approach the better classes of European wines than do the latter. The fact, also, that the best California wines thus far are produced from vines originally brought by the Spanish settlers nearly 100 years since from Spain, and acclimated in and near what is now the county of Los Angeles, seems likely to afford at least one instance in contradiction of the generally accepted rule, that the grape transported from one country to another never yields in the latter a wine equal to that which it afforded in its original locality. Los Angeles, 300 miles S. E. of San Francisco, near the southern extreme of California, and having a climate much resembling that of Spain, is thus far the chief seat of the wine produce, the quantity of which in 1858 was about 75,000 gallons, and the varieties of which chiefly imported to the eastern cities are known as the white or hock, Angelica, muscatel, and port. The culture of the grape for wine is now rapidly extending, however, through the state; and it is anticipated that the slopes on either side the Sacramento river and the region of Sonoma county will yet become famous for their vintages of the dry and acid wines. Indeed, the clear, dry, and comparatively calm atmosphere of California, and the protracted summer enjoyed by most parts of the state, render it peculiarly adapted to the perfection of the grape, and promise to make this region for its wines at no distant day the France of America. In certain districts of the state of New York the production of native wines is rapidly on the increase; and it is already true that one reason for believing the so called champagnes, and perhaps clarets, of commerce in this country to be not altogether imitations from alcohol or distilled liquors, is to be found in the fact that a considerable share of wines passing under those names is even now the produce of American vineyards, put up and sold under labels appropriate to the French varieties.—As already intimated, beverages known as wines are produced from certain other juices beside that of the grape; the constituents essential to such result being sugar in sufficient quantity, and certain flavoring and perhaps odorous principles giving some approach to the flavor and bouquet of wine proper. Thus, wines, some of which are comparatively palatable and wholesome, are obtained from such fruits as the currant, gooseberry, raspberry, blackberry, and elderberry; and also from other parts of certain plants, as from the root of the parsnip and beet, the stem of the birch and cocoa palm, the leaves of the grape vine, and the spathe or sheath of the *sagus vinifera* and other palms. The popular prejudice in favor of some of these fruit and vegetable wines, that they contain no alcohol, is of course wholly erroneous; and in those to which sugar is added before or during fermentation the percentage of alcohol is usually considerable.—Among the many treatises relating to the subjects of grape culture and wines, the reader is especially referred to Henderson's "History of Ancient and Modern Wines;" Mulder's "Chemistry of Wine," translated by H. Bence Jones (London, 1859); and in respect to the management of the grape and wine in this country, to Phin's "Open-Air Grape Culture," including the manufacture of domestic wines (New York, 1862). The dietetic and medical properties of the several European wines are very fully treated of in Pereira's "Food and Diet" (reprinted, New York, 1850).—The importations of wine into the United States during the year ending June 30, 1861, were as follows:

IN CASKS.

Kinds.	Gallons.	Value.
Austria, and other of Germany	278,595	$104,956
Burgundy	7,759	3,854
Claret	982,040	322,306
Fayal, and other Azores	33	32
Madeira	80,894	60,857
Port	248,334	165,126
Sherry and San Lucar	423,570	348,329
Sicily, and other Mediterranean	102,367	42,562
Teneriffe, and other Canary	2,804	1,321
Red wines, not enumerated	1,117,760	369,410
White wines, not enumerated	1,037,981	324,907
Under tariff of March 2, 1861	134,446	47,145
Total	4,416,583	$1,790,805

IN BOTTLES.

Kinds.	Dozen.	Value.
Burgundy	776	$3,999
Champagne	148,258	826,754
Claret	101,321	192,301
Madeira	231	643
Port	2,173	13,071
Sherry	1,316	7,244
All other	106,835	247,255
Under tariff of March 2, 1861	....*	56,102
Total	360,910	$1,347,369

The reëxports of wine in casks amounted to 133,798 gallons, value $94,657; in bottles, 10,849 dozen, value $46,954. (For the value of the imports in the years 1857, 1859, and 1860, see UNITED STATES, vol. xv. p. 804.) The total amount of wine entered for consumption in Great Britain in 1851 was 6,280,653 gallons, and in 1859, 7,263,046; of the latter amount, 2,020,561 gallons were port, 2,876,554 sherry, 695,913 French of all kinds, 227,657 Marsala, 29,566 Madeira, 125,408 Rhenish, &c., 785,926 Cape (South African), and 501,461 unenumerated, mixed, &c. The total exports of wine from France in 1850 were 47,067,213 gallons, valued at $7,926,440; in 1859, 64,733,671, valued at $41,422,066. Of *vins de liqueur* the exports in 1850 were 825,955 gallons, valued at $500,624; in 1859, 1,788,958, valued at $3,253,004.

WINEBRENNER, JOHN, an American clergyman and founder of a religious denomination, called by him the "Church of God," but commonly known as Winebrennerians. He was originally a minister of the German Reformed church, and settled in 1821 at Harrisburg, Penn., where he took charge of 4 small congregations. Great revivals took place in his congregations, but he was charged with deviating from the practice and spirit of his denomination. He finally withdrew after some time from the German Reformed church, and held a meeting with several other preachers, in Oct. 1830, at Harrisburg, where it was agreed that the only scriptural name for the one true church was the "Church of God;" that to her they would henceforth belong; and that an eldership (convention), consisting of teaching and ruling elders, was to be held annually. The officers of this new denomination are two bishops or elders and deacons. In 1861 there were 11 elderships, meeting annually, while a general eldership, composed of delegates from the annual elderships, is held every 3 years. The latter owns and controls all the common property of the church. No minister can be a delegate to the general eldership who has not held a preacher's license for 5 years previous to such appointment. The church property of each society, such as the meeting houses (by the denomination called bethels), parsonages, &c., is held by the elder in trust for his successor in office, the deed containing a provisional clause transferring the same to the annual eldership of the district in which it is situated, in the event of the extinction of the society. The church will have no fellowship with any who countenance slavery, and is equally severe upon the makers and venders of ardent spirits. The denomination has a domestic and foreign missionary society, and a printing establishment, for the publication of religious tracts, pamphlets, books, and periodicals, both of which are under the sole control of the general eldership. The church had in 1862 one weekly organ, the "Church Advocate," about 275 churches, 140 ordained ministers, and 14,000 members. The eldership of Texas seceded in 1860, being unwilling to adhere any longer to the anti-slavery principles of the church.—According to the belief of this denomination, there are 3 positive ordinances of perpetual standing in the church, viz., baptism, feet washing, and the Lord's supper; two things are essential to the validity of baptism, viz., faith and immersion, and faith should precede immersion; the ordinance of feet washing is obligatory upon all Christians; the Lord's supper should be often administered, and to Christians only, in a sitting posture, and always in the evening. Fast days, experience meetings, anxious meetings, and camp meetings are among their frequent practices.

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* 108,099 gallons.

WINER, Georg Benedict, a German Protestant theologian, born in Leipsic, April 13, 1789, died there, May 12, 1858. He studied theology and philosophy at the university of his native town, where in 1829 he became extraordinary professor. In 1843 he was appointed professor of theology in the university of Erlangen, but in 1852 returned to Leipsic. His "Grammar of the Idiom of the New Testament" is still regarded as the standard work on this subject, and has been translated into English. His "Biblical Dictionary" (*Biblisches Realwörterbuch*, 2 vols., 3d ed., Leipsic, 1845-'7) is celebrated. His other works are valuable.

WINES, Enoch Cobb, D.D., an American professor and author, born in Hanover, N. J., Feb. 17, 1806. In his childhood his family removed to Vermont, and he was graduated at Middlebury college in 1827, became principal of an academy at St. Albans, and afterward assistant teacher in a female seminary in Alexandria, Va., and next opened a school in Washington city. In 1829 he obtained the office of teacher on board the ship Constellation, in which he visited the shores of the Mediterranean. In 1833 he took charge of the Edge Hill school in Princeton, N. J., in 1838 became a professor of languages in the central high school of Philadelphia, and in 1844 founded a boarding school in Burlington, N. J., where he remained 4 years, and then spent a year in giving lectures on the Hebrew constitution and laws, chiefly in New England. He was licensed to preach in Jan. 1849, by the Congregational association of Rhode Island, and has since preached in various places, been a professor in Washington college, Penn., and had charge of a literary institution in St. Louis. This last situation he resigned in 1861. He has published "Two Years and a Half in the American Navy" (2 vols. 12mo., Philadelphia, 1832); "Hints on a System of Popular Education" (12mo., Philadelphia, 1837); "How shall I Govern my School?" (12mo., 1838); "Commentaries on the Laws of the Ancient Hebrews" (8vo., New York, 1852); and other works.

WINKELRIED, Arnold Struth von, a knight of the Swiss canton of Unterwalden, who opened the way for the victory of Sempach, July 9, 1386. The Austrian troops, completely covered with armor, were formed into a compact body which resisted the efforts of the Swiss, drawn up in the form of a wedge and rushing to the attack. The Austrians were now beginning to surround their enemies, when Arnold von Winkelried, seeing the desperate condition of affairs, burst from the ranks exclaiming: "I will open a passage into the line; protect, dear countrymen and confederates, my wife and children;" threw himself upon the ranks opposed to him, and, grasping all the pikes within his reach, buried them in his bosom, and bore them by his weight to the earth. Over his dying body his companions rushed into the opening he had made, and defeated their enemy with terrible slaughter. A solemn anniversary was established in honor of Winkelried and his companions who fell on that day.

WINKIN DE WORDE. See Worde, Wynkin de.

WINN, a new N. parish of Louisiana, bounded W. by Saline bayou; area, about 1,200 sq.

m.; pop. in 1860, 6,876, of whom 1,354 were slaves. The surface is generally level and the soil fertile. There are numerous small lakes and ponds. Capital, Winfield.

WINNEBAGO. I. A N. co. of Illinois, bordering on Wisconsin, and drained by Rock river and its branches, the Pekatonica and Kishwaukee; area, 504 sq. m.; pop. in 1860, 24,492. The surface is undulating and diversified by rolling prairie and woodland, and the soil is exceedingly fertile. The productions in 1850 were 316,586 bushels of wheat, 281,452 of Indian corn, 188,333 of oats, and 14,444 tons of hay. There were 9 churches, 1 newspaper office, and 2,610 pupils attending public schools. It is intersected by the Chicago and Galena railroad and its Beloit branch, and the Kenosha, Rockford, and Rock Island railroad. Capital, Rockford. II. An E. co. of Wisconsin, bounded E. by Lake Winnebago, and intersected by the Neenah and Wolf rivers; area, 468 sq. m.; pop. in 1860, 23,769. The surface is level and diversified by forests and prairies, and the soil is highly fertile. The productions in 1850 were 57,072 bushels of wheat, 34,722 of Indian corn, and 77,795 lbs. of butter. There were 2 newspaper offices, and 1,798 pupils attending public schools. Limestone abounds. It is intersected by the Chicago and north-western, and the Milwaukee and Horicon railroads. Capital, Oshkosh. III. A new N. co. of Iowa, bordering on Minnesota, and drained by head streams of the Des Moines, Iowa, and Shell Rock rivers; area, about 375 sq. m.; pop. in 1860, 168. The surface is undulating, diversified by prairie and woodland, and the soil is fertile.

WINNEBAGO, a lake of Wisconsin, the largest within the limits of the state, occupying parts of Calumet, Fond du Lac, and Winnebago counties. Its length is 28 m. N. and S., greatest width about 10 m.; area, about 212 sq. m. Its depth is variable, and it is navigable in most parts. Several steamers ply between Fond du Lac, Oshkosh, and other towns on its shores, and there is water communication to Green bay and Lake Michigan by the Fox river, which is improved by dams and locks. A remarkable wall of rocks extends along the E. border for 15 m., reaching in some places hundreds of feet below the surface.

WINNEBAGOES, a tribe of North American Indians, who, as long ago as 1639, when they were visited by Nicolet, were living about Green bay on Lake Michigan, and who afterward occupied the country about Winnebago lake and along the shores of the Wisconsin river in the present state of Wisconsin, and on the Red, Cedar, Iowa, and Turkey rivers in Iowa. The name, as Shea says, was given to them by the Algonquins, in whose language it signifies fetid, meaning that they had come from the salt water; and Nicolet speaks of them as *gens de mer* or *gens des eaux de mer*. Captain Grignon however maintains that Winnebago, in the Menomonee language, means simply filthy; and Charlevoix that this name, which his countrymen translated as *Puants*, the appellation of the tribe in French, was given them on account of the foul odor of the relics of the fish on which they lived, remaining about their habitations. Schoolcraft tells us that they call themselves *Hochungara*, the trout nation, and *Horoji*, the fish eaters. According to the Algonquin tradition, they came originally from the Pacific, and their approach to the lakes was resisted especially by the Illinois, and in the course of the wars then waged the Winnebagoes were nearly destroyed. Schoolcraft, on the other hand, says that the earliest tradition of the tribe places them at the Red Banks of Green bay, where they built a fort. They were engaged in the war of Pontiac against the English in 1763, and in the early settlement of Wisconsin by the whites they were always troublesome and often hostile. In 1794 Gen. Wayne defeated them; in 1812 they took the side of the English against the United States; and in 1827 Gen. Atkinson was obliged to enter their country at the head of a brigade. In 1831 a part of the tribe participated in Black Hawk's war. In 1820 they were estimated at 500 men, 350 women, and 750 children. In 1829 they were officially estimated to number 5,800 souls; they were then mainly living upon the Rock river of the Mississippi and the Wisconsin river; one band was on the Mississippi, about 80 m. above Prairie du Chien. In 1848 they were removed from Wisconsin to a territory containing about 850,000 acres on the S. E. of Otter Tail lake in Minnesota. On occasion of this removal, a census was taken showing their number to be 2,531 souls in 431 families. A treaty was made with them on April 15, 1859, providing for the distribution of their lands, giving to each head of a family 80 acres and to each male above 18 years old 40 acres, the rest to be sold for their benefit; but owing to dissatisfaction among them this distribution has not been consummated. In 1861, 70 males and 59 females attended the mission school. Though restless and discontented for the past 2 or 3 years, they appear to have taken no part in the Sioux outbreak of July and Aug. 1862.

WINNESHIEK, a N. E. co. of Iowa, bordering on Minnesota, and intersected by Upper Iowa and Turkey rivers; area, about 600 sq. m.; pop. in 1860, 13,942. The surface is rolling, diversified by prairies and woodland, and the soil is fertile. The productions in 1859 were 155,039 bushels of wheat, 246,020 of Indian corn, 136,429 of oats, 202,205 lbs. of butter, and 14,318 tons of hay. Capital, Decorah.

WINNIPEG, Lake. See Hudson's Bay Territory, vol. ix. p. 324.

WINNIPISEOGEE, Winnipesockee, or Winnipesaukee, a lake of New Hampshire, lying between Carroll and Belknap counties. Its extreme length is 25 m., its greatest breadth about 10 m., and its altitude above the sea 472 feet. Its form is very irregular, and it is studded with islands. At its W. end it is divided into 3 considerable bays; at the E. extremity are 3 smaller bays, and on the N. is still another. Its waters are very pure and of great depth; they are said to be fed by springs within its bosom. Its outlet is the rapid river of the same name, which discharges its waters into the Merrimack. It is abundantly stocked with fish. The slopes of the surrounding hills recede from its surface, and attain at some little distance an altitude of 2,000 feet or more. The scenery of the lake and islands is exceedingly beautiful.

WINONA, an E. co. of Minnesota, bordering on the Mississippi river, which separates it from Wisconsin, and drained by Whitewater river and several smaller streams; area, 638 sq. m.; pop. in 1860, 9,208. It has a level surface, consisting mostly of rolling prairie diversified by woodlands. The soil is highly fertile. The county has been formed from Wabashaw co. since 1850.—Winona, the capital, is situated on a rolling prairie 9 m. long and 2 m. wide, on the right bank of the Mississippi river, 175 m. S. E. from St. Paul; pop. in 1860, 2,650. It is the largest wheat market in the state, the receipts of wheat in 1859 being 750,000 bushels; in 1860, 1,600,000; and in 1861 estimated at 2,000,000 bushels. It has a bank, 2 grist mills, 5 steam saw mills, a foundery and machine shop, several factories of agricultural implements, a distillery, 3 breweries, and a daily and 2 weekly newspapers. It is the seat of the Minnesota state normal school. There are 8 churches, viz.: 1 each Baptist, Congregational, Episcopal, German Methodist, German Lutheran, Methodist Episcopal, Presbyterian, and Roman Catholic. The Winona, St. Peter's, and Missouri river railroad is now constructing. The first permanent settlement at this point was made in 1853.

WINNOWER. See Fanning Machine.

WINSLOW, Edward, governor of Plymouth colony, born in Worcestershire, England, Oct. 19, 1595, died at sea, between St. Domingo and Jamaica, May 8, 1655. He was of good family, and while yet young had made the tour of Europe. At Leyden he joined the church of the Rev. John Robinson in 1617. He was one of the passengers in the Mayflower, and in the first conference with Massasoit offered himself as a hostage, and won the attachment of the Indian chief, which he increased in 1623 by curing him of a severe illness. In 1623–'4 he made two voyages to Europe as agent for the colony. He was chosen governor of the colony in 1633, 1636, and 1644. In 1635, visiting England again as agent for the colony, Archbishop Laud imprisoned him in the Fleet prison for 17 weeks on the charges of having taught in the church, being a layman, and performed marriage as a magistrate. In 1649 he again visited England, was instrumental in the organization of the society for the propagation of the gospel in New England, and was employed in various public affairs. In 1655 Cromwell appointed him one of 3 commissioners to superintend an expedition against the Spaniards in the West Indies, and he died before its completion. He was the author of several works, mostly in defence of New England; the principal are: "Good Newes from New England," "Relation about Indians," &c., "Hypocrisie Unmasked," "A brief Narrative of the True Grounds or Cause of the first Planting of New England," "The Danger of Tolerating Levellers," and "Glorious Progress of the Gospell among the Indians."

WINSLOW, Forbes, M.D., an English physician, born in London in Aug. 1810. He was graduated M.D. at King's college, Aberdeen, and became a member of the royal college of surgeons, London, in 1835. In 1831 he published a "Manual of Osteology," a "Manual of Practical Midwifery," and an "Essay on the Application of the Principles of Phrenology to the Education and Cure of Insanity," followed by works entitled "Physic and Physicians," and "The Anatomy of Suicide." Soon afterward he opened an asylum for the insane at Sussex house, Hammersmith; and his reputation in mental diseases became so great that he was almost constantly employed as medical referee in cases of alleged insanity in the courts. In 1837 he was appointed Lettsomian lecturer to the medical society of London, and delivered a course of lectures on insanity, said to have been the first public course on that subject. In 1848 he established the "Quarterly Journal of Psychological Medicine and Mental Pathology," of which he has since that time been the editor. He was elected president of the London medical society in 1853, president of the association of the medical officers of hospitals and asylums for the insane in 1857, and commissioner in lunacy in 1859. He has published essays on "The Preservation of the Health of the Body and Mind," "On the Plea of Insanity in Criminal Cases," and "On the Act for the better Regulation and Care of the Insane, with Notes;" a "Synopsis of the Lunacy Act," "Lectures on Insanity," and "The Obscure Diseases of the Brain and Disorders of the Mind;" and has in preparation a work on "Idiocy, its Pyschology and Pathology."

WINSLOW, Hubbard, D.D., an American clergyman and author, born in Williston, Vt., Oct. 30, 1800. He was graduated at Yale college in 1825, studied theology there, and was settled as pastor of the Congregational church in Dover, N. H., in 1829, and of the Bowdoin street Congregational church, Boston, in 1832. From 1844 to 1853 he had charge of the Mount Vernon or Beacon Hill seminary for young ladies in Boston, afterward travelled for some months in France, Italy, and Germany, and in 1858 and 1859 preached to the first Presbyterian church in Geneva, N. Y. His health failing, he removed in the autumn of 1859 to New York city, where he now resides. His most important works are: "Controversial Theology" (Boston, 1832); "Philosophical Tracts" (1833); "Doctrine of the Trinity"

(1834); "Christianity applied to our Civil and Social Relations" (1835); "Young Man's Aid" (1836); "Aids to Self-Examination" (1836); "Appropriate Sphere of Woman" (1837); "Woman as She Should Be" (1837); "Relation of the Natural Sciences to Revelation" (1839); "Design and Mode of Baptism" (1842); "Christian Doctrines" (1844); "Moral Philosophy" (New York, 1856); and "History of the First Presbyterian Church and of the Village of Geneva, N. Y." (Boston, 1859).

WINSLOW, Miron, D.D., an American missionary, brother of the preceding, born in Williston, Vt., Sept. 12, 1789. He was graduated at Yale college about 1815, and sailed from Boston in June, 1819, as missionary to India. After laboring 17 years in Ceylon, he founded a mission at Madras, and was president of the native college connected with it. He was for about 20 years engaged in the preparation of a complete "Dictionary of the Tamil and English Language," which was published in 1862. This work is regarded by oriental scholars as one of the most valuable contributions yet made to oriental philology. He has also published a "Memoir of Mrs. Harriet L. Winslow," and "Hints on Missions to India."

WINSTON, an E. co. of Mississippi, drained by the head streams of Pearl river; area, 720 sq. m.; pop. in 1860, 9,811, of whom 4,223 were slaves. The surface is generally undulating and the soil fertile. The productions in 1850 were 326,409 bushels of Indian corn, 34,221 of oats, 87,173 of sweet potatoes, and 3,091 bales of cotton. There were 14 churches, 1 newspaper office, and 310 pupils attending public schools. Capital, Louisville.

WINTER, the coldest season of the year, which begins astronomically on the shortest day, Dec. 22, and ends with the vernal equinox, March 21. The winter months however are in the United States popularly reckoned December, January, and February, and in England November, December, and January. The countries lying in and bordering upon the torrid zone have no winter in the popular sense of the word, but in place of it a rainy season.

WINTER, Jan Willem de, a Dutch admiral, born at the Texel in 1750, died in Paris, June 2, 1812. He entered the naval service of Holland at the age of 12 years, and when yet a youth distinguished himself by his courage and daring. At the commencement of the revolution in Holland in 1787, he was only a lieutenant, and joined the popular party; but the partisans of the stadtholder gaining the ascendency, he was compelled to escape into France. There he entered the French army, served in the campaigns of 1792 and 1793 under Dumouriez and Pichegru, and rose rapidly to the rank of brigadier-general. In 1795 he returned to Holland with the republican army under Pichegru, was invited by the states-general to reënter their navy with the rank of rear admiral, and in 1796 became vice-admiral, and was put in command of the Texel fleet. On Oct. 11, 1797, his squadron of 27 vessels, 14 of them ships of the line, engaged that of the English under Admiral Duncan, and the battle which ensued, lasting 3½ hours, was one of the severest on record. The Dutch lost 9 ships of the line, 2 frigates, and 600 men killed and 800 wounded, and the English loss was nearly as heavy. The flag ship of Admiral de Winter only struck after losing all its masts and more than half its crew. The bravery of the admiral won the respect of his enemies, and completely exonerated him from reproach at home. From 1798 till 1802 De Winter was minister plenipotentiary to France, and in the latter year he was recalled to take command of the fleet; during his period of command he settled the difficulties between Holland and Tripoli. When Louis Bonaparte was king of Holland he created De Winter count of Huesca, marshal of the kingdom, and commander-in-chief both of the land and sea forces. Napoleon subsequently made him grand officer of the legion of honor, and inspector-general of the shores of the North sea. In 1811 he was appointed to command the naval forces assembled at the Texel, but was compelled by sickness to leave the fleet, and went to Paris.

WINTER, Peter von, a German composer, born in Mannheim in 1754, died in Munich in 1825. At 10 years of age he became a violinist in the orchestra of the elector, and in 1776 was appointed director of the orchestra of the German opera at Mannheim. His first attempts at composition met with little success, and it was not until his 40th year that he produced any really effective works. He was a prolific composer, producing more than 50 operas and a great number of masses, symphonies, and miscellaneous vocal and instrumental pieces. His maturer works, including the operas of *Calypso*, *Il ratto di Proserpina*, *Zaira*, and *Tamerlane*, are esteemed his best. His last composition for the stage, a comic piece called *Der Sänger und der Schneider* ("The Singer and the Tailor"), obtained great popularity.

WINTERBERRY. See Holly.

WINTERGREEN (*Gaultheria procumbens*, Linn.), a North American plant of the natural order *ericaceæ*, with slender and creeping underground stems, and leafy flowering branches, which are erect and about an inch high, bearing on their tops obovate and oval leaves, terminating with a few nodding and beautiful white or pinkish white blossoms urceolate in form, succeeded by small, 5-celled, capsular fruit, which is so invested by the succulent calyx as to look like a veritable berry, and which possesses a fine spicy flavor. This plant, which also bears the names of partridge berry, boxberry, and checkerberry, is extremely common in dry oak woods and copses throughout the eastern and middle states. Its fruits are persistent through the winter, and are eagerly sought for by children in the spring when the young leaves appear, and sometimes constitute an article for sale in the market. Both the wintergreen and the true partridge berry (see Partridge Berry) can be cultivated in gardens by imitating the natural soil, and are pretty ornaments for rockwork especially. A pleasant flavored water is distilled from the leaves of the wintergreen, and the essential oil is used to flavor the candies of the confectioner.

WINTERHALTER, Franz Xavier, a German painter, born in St. Blasien, Baden, in 1803. He was educated at the academies of Carlsruhe and Munich, and also studied a while in Italy. In 1834 he established himself in Paris, where he obtained the patronage of Louis Philippe, and in consequence that of many persons of note in the fashionable world. In like manner he has been liberally patronized by the English court. His productions have been principally portraits, with a few fancy pieces and pictures of *genre.* In France he has painted portraits of Louis Philippe and his queen, of all the members of the Orleans family, of Napoleon III. and his empress, and of the prince imperial. His large picture of the empress Eugénie surrounded by ladies of her court is well known by the engraving of it. He was the favorite court painter in England during the life of the prince consort, whose portrait, with that of the queen and the royal family, he has repeatedly painted. He has also executed portraits of the duke of Wellington, Sir Robert Peel, and other distinguished persons for the queen. Among his miscellaneous pieces may be mentioned *Il decamerone,* in the collection of the duke of Sutherland, and "Florinda," which represents Roderic the Goth seeing Florinda for the first time as she and her companions are about to bathe in the Tagus. The style of Winterhalter is conventional and meretricious, and his fancy pictures have little other merit than as elegantly composed figure pieces. He finishes carefully, and imparts a pleasing and well bred expression to his faces, with little or no character.

WINTHER, Rasmus Villads Christian Ferdinand, a Danish poet, born in Fensmark, in the island of Seeland, July 29, 1796. He studied at Copenhagen, and in 1830-'31 made a journey into Italy. In 1841 he was sent to Neu-Strelitz by King Christian VIII. to instruct in Danish the princess Caroline Charlotte Marianne of Mecklenburg, the affianced bride of his son, the present king Frederic VII. Between 1828 and 1853 he published 8 volumes of poems. He is one of the first of living Danish lyric poets, and has also written several novels. For a short time he was editor of the *Danske Kunstblad* ("Danish Art Journal"). He has since 1851 received from the government a pension of 1,000 rix dollars.

WINTHROP. I. John, governor of the colony of Massachusetts, born in Groton, county of Suffolk, England, Jan. 12, 1588, died March 26, 1649. He was bred to the law, and, according to the testimony of Cotton Mather, was commissioned at the age of 18 a justice of the peace. When in 1629 a charter was obtained creating a corporation under the name of the "Governor and Company of the Massachusetts Bay in New England," the piety, learning, and talents of Winthrop led to his election as governor. Converting his hereditary estate, yielding an annual income of £600 or £700, into money, he set sail on April 7, 1630, with a company of about 900 persons from Yarmouth. On the voyage he composed a little treatise, entitled "A Model of Christian Charity." On June 12 he arived at Salem, and the government was immediately transferred to him by Endicott, who had been the acting governor for two years by authority of the London company, before the transfer of the charter to New England. He was reëlected every year until 1634, when his popularity had somewhat declined, partly on account of his long continuance in office. In 1636, when Sir Henry Vane was elected governor, Winthrop was chosen deputy governor, and during this and the following year occurred the celebrated controversy in regard to Mrs. Hutchinson and her doctrines. Vane and Winthrop were on opposite sides, and in the election of 1637 the latter was chosen governor over Vane. The inhabitants of Boston, however, were friendly to Vane and Mrs. Hutchinson, and Winthrop was at first slighted by his neighbors. Subsequently he engaged in a controversy with his defeated opponent in regard to the alien law passed by the general court. He was reëlected every year until 1640; and in 1642 the troubled state of the colony induced the settlers to call him again to the head of the government. He was again elected in 1643, in the two following years was made deputy governor, and in 1646 governor again, which office he continued to hold the remainder of his life. In his principles Winthrop was opposed to an unlimited democracy; and when the people of Connecticut were forming a government, he wrote them a letter in which he said that "the best part of a community is always the least, and of that best part the wiser part is always the lesser." But he was attached to civil liberty, disinterested, pure, and conscientious. "It would be erroneous," says Palfrey, in speaking of the commonwealth of Massachusetts, "to pretend that the principles upon which it was established were an original conception of Winthrop's mind; but undoubtedly it was his policy, more than any other man's, that organized into shape, animated with practical vigor, and prepared for permanency, those primeval sentiments and institutions that have directed the course of thought and action in New England in later times." Winthrop kept a journal containing an account of the transactions in the colony down to the year 1649. The first two books were first published in 1790, and the manuscript of the third, which was for a long time deemed lost, was found in 1816 in the New England library kept in the tower of the Old South church. The three were published in a revised edition, enriched with notes by James Savage (2 vols. 8vo., Boston, 1825-'6).

II. John, governor of Connecticut, son of the preceding, born in Groton, England, Feb. 12, 1606, died in Boston, Mass., April 5, 1676. He was educated at Trinity college, Dublin, made the tour of Europe, followed his father to America in 1631, and was chosen a magistrate of Massachusetts, but soon returned to England. In 1635 he came back with a commission from the company formed under the Warwick grant or old patent of Connecticut, and built a fort at the mouth of the Connecticut river, of which plantation he was constituted governor for the space of one year after his arrival. In 1644–'5 he removed his family from Boston to Pequot harbor, where in the spring of the next year he founded what is now the city of New London. He was elected a magistrate of Connecticut in 1651, governor of the colony in 1657, deputy governor in 1658, and governor again in 1659. In 1661 he was sent to England to procure from Charles II. a charter for the colony of Connecticut. He was successful in his mission, and was the first governor under the charter, which united Connecticut and New Haven into one colony. In 1676 he visited Boston as the representative of Connecticut in a congress of the united colonies, and was there seized with his last illness. He was a man of eminent virtues, an accomplished scholar, one of the founders of the royal society of London, and the author of a number of papers in the "Philosophical Transactions." III. John, LL.D., an American scholar, a descendant of Governor Winthrop of Massachusetts, born in Massachusetts in 1715, died in Cambridge, May 3, 1779. He was graduated at Harvard college in 1732, and in 1738 appointed Hollis professor of mathematics and natural philosophy in that institution, holding that office till the close of his life. In 1740 he observed the transit of Mercury, of which he furnished very accurate notes, and in 1761 went to Newfoundland to observe the transit of Venus across the sun's disk. He published a lecture on earthquakes (1755), two letters on comets (1759), and other tracts on astronomical subjects. The degree of LL.D. was conferred upon him by the university of Edinburgh. IV. Robert Charles, LL.D., an American statesman and orator, a descendant in the 6th generation of the first Governor Winthrop, born in Boston, May 12, 1809. He was graduated at Harvard college in 1828, studied law in the office of Daniel Webster, and was admitted to the bar in 1831, but soon withdrew from the practice of his profession. In 1834 he was elected to the house of representatives of Massachusetts, and reëlected in 5 successive years, during the last 3 of which he served as speaker. In the autumn of 1840 he was chosen to the house of representatives in congress, and continued a member of that body during the next 10 years, with the exception of a brief interval during which he resigned his trust in consequence of domestic affairs. In the summer of 1847 he visited Europe; and in December of that year he was chosen speaker of the U. S. house of representatives. At the meeting of the 31st congress in 1849 he was the candidate of the whig party for reëlection to the office of speaker; but after 63 ballots, extending through 3 weeks, his opponent, Mr. Howell Cobb, was chosen by a plurality of two votes. In 1850 he was appointed by the governor of Massachusetts to succeed Mr. Webster in the senate, when the latter took the office of secretary of state under President Fillmore. In the early part of 1851 he was the candidate of the whig party before the legislature for the senate of the United States, but was after a long contest defeated by Mr. Sumner, the result of a combination between the democratic and free soil parties. In the autumn of the same year Mr. Winthrop was the candidate of the whig party for the office of governor, and received 65,000 votes, Mr. Boutwell, the democratic candidate, a little over 40,000, and Mr. Palfrey, the free soil candidate, a little less than 30,000; but as an absolute majority was then required for an election by the people, there was no constitutional choice, and Mr. Boutwell was elected governor by the legislature. During his period of public service in congress Mr. Winthrop was a leading member of the whig party. He was a frequent speaker, and his speeches always commanded attention from their substantial weight of argument and scholarly finish of style. A volume of his "Addresses and Speeches" was published in 1852. Since his retirement from public service he has lived in Boston. He is president of the Massachusetts historical society and of the Boston provident association. In Dec. 1853, a lecture on Algernon Sidney was delivered by him before the Boston mercantile library association. In April, 1857, he delivered an address on "Christianity as a Remedy for Social and Political Evils" before the young men's Christian association of Boston, and in May of the same year an address in aid of the fund for Ball's equestrian statue of Washington. These discourses with many others have been printed. In 1859 and 1860 he made an extended tour in Europe.

WINTHROP, Theodore, an American soldier and author, born in New Haven, Conn., Sept. 22, 1828, killed at the battle of Great Bethel, Va., June 10, 1861. He was graduated at Yale college in 1848, and for the sake of his health visited England, Scotland, France, Germany, Italy, and Greece. Returning to New York, he became tutor to the son of Mr. W. H. Aspinwall, and afterward accompanied his pupil to Switzerland, spending 6 months in Europe, and then entering Mr. Aspinwall's counting house in New York. He resided about two years in Panama in the employ of the Pacific mail steamship company, visited California, Oregon, and Vancouver's island, resumed his situation in the counting house for a short time, and then joined the unfortunate expedition of Lieut. Strain to explore the isthmus of Darien. In 1854 he came home with shattered health, studied law, was admitted to the bar, and commenced practice at St. Louis; but the climate proving uncongenial, he soon returned to New York. When President Lincoln's proclamation calling out the militia was issued after the fall of Fort Sumter in April, 1861, he joined the 7th regiment of New York, and went with it to Washington. Before the expiration of its term of service he became military secretary to Gen. Butler at Fortress Monroe, with the rank of major. He volunteered to accompany the expedition to Great Bethel, and fell in the advance while cheering on the men. He left in MS. three novels, "Cecil Dreeme," "John Brent," and "Edwin Brothertoft," which, as well as a number of magazine articles, have been published since his death.

WINTON, or **Wyntoun, Andrew**, a Scottish poet and chronicler of the 14th and 15th centuries. He was a canon regular of St. Andrew's and prior of Lochleven, certainly from 1395 to 1413, and was living in 1420. At the suggestion of Sir John Wemyss, he wrote in verse an "Orygynale Cronykil of Scotland," divided into 9 books "in honour of the orders nine of holy angels." It is valuable not only as a historical authority, but also on account of its many curious details illustrative of society and manners. That portion of it which relates particularly to Scottish affairs was edited by David Macpherson, with a glossary (2 vols. 4to., London, 1795).

WINTZINGERODE, Ferdinand, baron, a Russian general, born at Bodenstein, Brunswick, in 1770, died in Wiesbaden, June 17, 1818. He served in the Hessian and Austrian armies, but resigned after the peace of Campo Formio to enter the Russian service. In 1802 he became a general adjutant of the czar, and was sent in 1805 to Berlin to induce the king of Prussia to join the coalition against Napoleon. At Austerlitz he narrowly escaped capture, and at Aspern, having temporarily returned to the Austrian service, a chain shot crushed his foot, and he was made a field marshal lieutenant upon the battle field. In 1812 he was taken prisoner near Moscow, and Napoleon ordered him to be shot; but his life was spared in order not to provoke retaliation upon French generals in the hands of the Russians. At Lützen, Dennewitz, Leipsic, the storming of Soissons, and the battle of St. Dizier, he gained great distinction as a commander.

WIRE, metal elongated into threads or small rods, of thicknesses varying from about half an inch to even less than $\frac{1}{1000}$ of an inch, but intended for each size to be uniform through out the piece; these threads or rods having usually the cylindrical form, and being commonly produced by the process known as wire drawing. Essentially, this process consists in drawing or pulling a suitably prepared piece of the metal thus worked through a series of holes made in a hardened steel plate, called a draw-plate, and which successively diminish in diameter. In this way the cross section of the wire is gradually reduced to that of the last hole through which it is passed; its length, meanwhile, being correspondingly and greatly increased. As a consequence, wire can be produced only from such metals as are susceptible in this way of being pulled out or extended by stretching into rods. Such metals are said to be drawable, or to have the property of ductility. This property is not to be confounded with that of malleability, namely, that in virtue of which a metal is laminable, or admits of being hammered or rolled into thin plates; since the same metal is often malleable and ductile in very different degrees. Thus, while gold possesses both these properties in an extreme, and probably in the highest known degree, iron is ductile in a degree far beyond that in which it is malleable, and with tin and lead the reverse is true. Of the familiarly known metals, the most ductile, and in the order named, are gold, platinum, silver, copper, steel, iron, brass, zinc, lead, and tin; while aluminum, and some of the ordinarily brittle metals when made perfectly pure, as bismuth, are said to possess very high ductility.—From his examination of the history of wire drawing, Beckmann is led to conclude that in early times metals were brought to the filamentous form only by means of beating them under the hammer into thin plates, then dividing these by cutting instruments into narrow strips, and rounding finally with the hammer and file. Such a view agrees with the account given in Exod. xxxix. of the sacerdotal dress, and with that of the fable of Vulcan's forging a net of delicate wire-work with which to ensnare Mars and Venus. The earliest known mention of "wire drawers" and "wire millers," as those who produced wire by drawing were variously called, occurs in 1351 and 1360, in the histories respectively of Augsburg and Nuremberg, the previous accounts being only of "wire smiths," or those who fabricated wire with the hammer. The change from the old to the new method was accomplished, or very soon followed, by the introduction of a machine by which wire was successfully produced without direct aid of the hand; this machine, probably the invention of one Ludolf, of Nuremberg, was impelled by water power. The precious metals appear to have been the first subjected to this process—brass and iron not until some time later. White wire, or blanch iron wire, is in fact mentioned in a list of articles not to be imported into England in 1463; and in 1484 both iron and latten (fine brass) wire are similarly named. Anderson, however, records that up to 1565 English iron wire was drawn by hand only, and was of so poor a quality that most of that used in the country, and also wool cards and other articles involving the employment of wire, were imported; and that in the year named patents were granted to certain Dutchmen or Germans to manufacture wire in England. In 1630 this manufacture is spoken of as employing many thousand persons, and producing a superior article; and the importation of foreign wire, wool cards, and hooks and eyes, of the last named of which (made from wire) a very large amount was already consumed, was again formally prohibited. In the 17th century the business of wire drawing became largely established about Barnsley, in Yorkshire; while the manufacture of copper and brass wire also was commenced (1649) by foreigners at Esher.—For the making of iron wire, the best and toughest wrought iron is selected. Formerly, this iron was prepared for drawing by hammering it out into convenient rods of nearly a half inch thickness. These rods were then extended and further reduced by a sort of coarse drawing, called ripping or rumpling, performed by means of a machine, believed to be also the invention of Ludolf, in which a pair of pincers were made to advance to the draw-plate, seize the protruding end of the rod, and then, being moved back and drawing the metal thus far, to relax their hold, advance again to the plate, and repeat the process. Owing to the interrupted action, the use of this machine involved loss of time, while a degree of unevenness in the product, and the marks left by the pincers, rendered it unsuitable for the manufacture of small wire or that of the best quality. Until very recently, however, and especially on the continent of Europe, iron wire was drawn altogether by such a machine. At the present time, iron, and usually steel, are prepared for the final drawing by passing between grooved rollers very accurately made and adjusted, of 7 or 8 inches diameter, and sometimes making 350 revolutions to the minute. To allow the rod in being rolled to advance continuously forward, 3 rollers are employed, one above the other, so that the rod, entering in one direction between the upper two, may return between the lower two, then back between the upper, and so on, without loss of its heat or of time; and in this way a bar of the metal 30 inches long and a square inch in section is passed rapidly through grooves diminishing in size, until it is greatly extended, being as a rule reduced in the process to about ⅛ inch diameter. The wire thus formed being dark in color, while that drawn is whitish, the two kinds are distinguished by the respective names of "black wire" and "bright wire." The former being much the cheaper, it is employed for coarser uses generally, especially those in which it is to be concealed in the work or coated with paint; thus it is used for strengthening the rims of tin and copper ware, the plate of tinned iron or copper being turned over the wire so as to cover it, and also for wire fences and other like purposes. The cast steel wire intended for making the best needles and some similar articles is prepared for drawing with the hammer, in preference to submitting it to the rolling process. But however the metal may be prepared, and in whatever manner the drawing may be performed, this latter operation is in all cases essentially the same in principle. Very commonly the draw-plate is a piece of hardened or shear steel, about 6 inches in length and 1½ inches thick, flattened on one side and slightly tapered toward the ends. From the flat side of this plate, at which they have their larger extremity, to the opposite side, several conical holes are pierced, their smaller orifices being carefully finished to the sizes they are respectively intended to give to the wire drawn through them. As the holes necessarily become enlarged by long use, when this occurs the smaller orifices are reduced by hammering, and then opened to the proper size again by means of a long taper needle, called a pritchell. Of the mode of preparing the French draw-plates, which are believed to be superior to those of other countries, a complete account has been given by M. Du Hamel, and is repeated by Holland and some other English writers. These plates, it appears, are formed by repeatedly fusing and hammering, to insure their complete union, the two lateral parts of a compound bar, one part being of wrought iron, the other part of a sort of steel, called *potin*, previously obtained by melting to a paste fragments of cast iron pots with whitewood charcoal, throwing this into cold water, and repeating the melting and sudden cooling 10 or 12 times. When the union of the two parts is complete, the plate is reheated and extended; and it is then several times heated and punched with successively smaller punches, to secure tapering holes; though these, which are of course smallest at the steel or hardest side, where the wire is to be reduced in the drawing, are left to be finished in the cold plate by the wire drawer himself. The orifices should be made successively smaller by almost imperceptible gradations, so that the reduction of the wire and the effort required shall be at the successive drawings as nearly uniform as possible. Draw-plates which have become too hard, by repeated hammerings to reduce the holes, are tempered anew by annealing; but as they will naturally vary somewhat in hardness, the hardest are reserved for steel wire, while the very soft are still suitable for drawing brass.—In drawing wire by hand, the draw-plate is supported against two upright bars firmly fixed below into a bench or table; one end of the rod to be drawn is hammered down so that it passes through the largest of the holes required for it, and being seized by pincers of a small machine like that for ripping above described, a length is thus drawn sufficient to allow of securing the end upon a small cylindrical drum which stands facing the draw-plate, and can be turned about a vertical axis. The workman then commences turning the drum by means of a crank attached to the upper end of its axis, and holding in his left hand at the same time the rod or coil of thick wire to be reduced, he continually turns this slightly, so as to impart to the forming wire a sort of twist. In order conveniently to exert the greater power required for drawing coarse wire, the workman walks continually round the bench, pushing the crank as he goes. In drawing wire by water or steam power, in factories, the coils of undrawn wire are placed upon reels, and the winding cylinders are turned by means of suitable connections with the driving shaft, often by bevel gearing beneath the benches; a contrivance being added for throwing each cylinder out of gear as often as its coil of wire is completely drawn through.—Whether wire is drawn by machinery or by hand, after a few drawings, and less in number as its size is smaller, it so far loses its ductility and becomes brittle under the process, as to be in danger of snapping off, or at least as to impair its quality and strength; and to restore its toughness and ductile character, it requires to be placed in an annealing oven, kept heated for a certain time, and then allowed to cool slowly. In thus annealing the wire, every precaution must be adopted to avoid waste and deterioration of the metal by oxidation; and a certain uniform temperature is applied in case of each size, the coarsest wire requiring the greatest heat; an improved furnace for these purposes was invented by the Messrs. Mouchel. The wire, removed from the ovens and cooled, is scoured or washed to free it from the oxide that will have formed; immersion for a time in starch water or in stale beer grounds is found to favor this result. At a wire manufactory some years since, some ingots of brass were heated and quenched in the slightly acid liquor employed for cleaning the annealed wire, as a ready means of warming the liquor; this wire was found to pass with unusual ease through the draw-plate; and an examination showed that the acidulated liquor had deposited over the wire (by galvanic action) a delicate film of copper, which appeared then to play the part of lubricant to the iron. The advantage secured by the discovery was such as to lead to the employment ever since in that factory of a weak solution of a copper salt in the cleaning liquor, the copper film on the wire being wholly removed in connection with the last annealing. With most descriptions of wire, grease also is commonly and freely used, and with the finer sizes wax, for purposes of lubrication. To prevent depriving steel wire during the repeated annealings of its carbon, it is surrounded while in the furnace with charcoal dust.—The speed at which wire should be drawn is found to vary with the quality of the metal and the thickness of the wire. The hardest steel requires the slowest movement; but in any case the rate is increased as the wire is reduced in size. As examples of the best practical speed, Dr. Ure gives, for iron and brass wires 0.3 inch in diameter, 12 to 15 inches per second; for those of $\frac{1}{40}$ inch, 40 to 45 inches per second; for still finer wires of silver or copper, 60 to 70 inches per second. To remedy for fine wires the inequality that must exist in the thickness in any great length, and due to slight wear at the orifice through which the wire escapes, Mr. Brockedon in 1819 patented the use in fine draw-plates of the hardest precious stones, drilled with orifices of the sizes required. With a plate having a hole pierced through a ruby, and of 0.0033 inch in diameter, a silver wire 170 miles long has been drawn so nearly uniform that neither the micrometer nor the weighing of equal lengths at the two ends showed any difference in the size. In 1813 Dr. Wollaston communicated to the royal society a method devised by him for preparing wires of extreme tenuity, for use in place of the "spider lines" employed for marking equal divisions across the field of the telescope. He drilled holes lengthwise through small rods of silver, cast into these cores of gold, drew the compound bars, and then obtained the gold wire of correspondingly reduced size by removing the silver by an acid. Subsequently, as both more convenient and effectual, he drew platinum wire, say to $\frac{1}{100}$ inch diameter, and cast about this a cylinder of silver, such that the platinum should be $\frac{1}{20}$ the diameter of the compound rod; this rod, $\frac{1}{5}$ inch in diameter, is then drawn to a wire so fine that, the two metals (as in case of the gold and silver above) perfectly maintaining their relative diameters throughout the process, the removal of the silver by nitric acid finally leaves a platinum wire of far less size than could be attained by drawing the metal singly, and which has been brought, it is said, to a thickness of only $\frac{1}{30,000}$ of an inch. Of such wire, a mile's length would weigh but a grain, and 150 filaments in close contact would barely equal the size of an ordinary filament of raw silk. Actual gold wire being in use for a few purposes only, among them that of making filigree work, that which is commonly known as "gold wire" is really silver gilt; and the mode of making this quite as strikingly exemplifies the extreme ductility of the precious metals. A silver rod an inch in diameter is covered with leaf gold, and by drawing and annealing this rod is then reduced to the finest wire required; and though in the outset but 100 to 140 grains of gold are thus allowed to a pound of silver, the wire produced is still completely coated with the former metal. Such wire is wound upon thread to form gold thread, the economy as well as beauty of the product being increased by previously flattening the wire between polished steel rollers. Brass wire also is made so fine, even by the ordinary processes, that gauze may be woven from it which shall have 67,000 meshes to the square inch.—The sizes of wires are conveniently distinguished in commerce and in their employment, by naming the actual diameters, or more commonly by a set of numbers corresponding to these. For determining the diameters or numbers, wire gauges of different patterns are in use; but since the gauges employed in different districts or factories very commonly do not agree with one another, and many of them are not regular throughout in the gradations which they establish or measure, the numbers are not a sure criterion of size, and much confusion practically exists through the want of a universal and uniform standard. To attain such a standard, Mr. Holtzapffel, in the appendix to the second volume of his "Mechanical Manipulations," proposes to employ only the decimal divisions of the inch, giving to these their proper appellations. Thus, wires would be distinguished as $\frac{3}{10}$ wire, $\frac{7}{100}$, $\frac{12}{1000}$ wire, &c., the gradations requiring to be named being also most numerous in the small sizes. Mr. Whitworth, of England, has given, in the "Proceedings of the Institution of Mechanical Engineers" for 1859, an account of an admirable contrivance for gauging or measuring minute quantities, by which $\frac{1}{1000}$ of an inch in the measure of wire or sheet metal is distinctly appreciable. His gauges are prepared with decimal numbers on one side, from No. 18 to No. 300, and measuring from 0.018 to 0.300 of an inch. In order if possible to secure uniformity of measurement and numbers for wire in the United States, several companies in New York and the New England states have adopted a new gauge devised by Messrs. Brown and Sharpe, of Providence, R. I., in which the thickness is readily determined by slipping the wire or plate within an angular opening between two steel bars with edges truly made, and along which respectively are marked the points at which the opening corresponds, for the new gauge and the common numbering, to sizes known as 0000 (0.460 inch in the new gauge), 000, 00, 0, 1, 2, and so on to 36 (0.005 inch). Gauges of the same general form have been previously in use; while those of the more common sort consist of a plate of steel having along each edge a series of slits or notches of varying widths, and numbered to correspond to the recognized sizes of wire.—The simple mode in which the drawing of wire is accomplished allows of giving to wires other forms than the ordinary or cylindrical. Thus, by making the opening in the draw-plate of suitable form, pinion wire, or that consisting of an axis with ridges or leaves projecting from it radially, so as to serve directly for making the pinions of timepieces, and of any size and number of teeth, is at once produced; though in this instance, as in all others in which rolling on the cylinder would destroy or injure the form of the wire, the drawing of each piece is accomplished by pulling it out in a straight line to full length over a long bench, the carriage to which the first end of the wire is attached being, by action of a hand winch and use of a horizontal rack, caused to move away from the plate. Pinion wire is then cut to the proper lengths for pinion and axis, and to form the latter at the ends the teeth are at these parts filed away; they are thus produced much more cheaply than by wheel-cutting. The grooved rims of spectacles are also conveniently made by drawing first as grooved wire of the required size and shape, then cutting into lengths and forming these to the rims of the glasses. The steel wire for making needles, and the common wire for cards and some other purposes, requiring to be straight, the curvature acquired in rolling upon the winding drums is removed by drawing the wire between pins set upright from a wooden bed, and so arranged as to bend the wire into a wavy line, the flexures of which are gradually diminished until they disappear; the wire is thus finally brought to be perfectly straight.—Wire is applied to a great variety of uses, to some of which allusion has already been made. Among these is that of the manufacture of wire gauze or cloth. Beckmann refers to some very old specimens of wire net-work, the plaiting or weaving of which was so intricate and curious as to have given rise to the tradition that it was accomplished by something more than human agency. The plainer sorts of wire gauze or net-work are woven on looms differing but little from those for cloth. Those of large wire and open meshes are employed for fences, large cages or buildings of wire for birds or small animals, and for coarse riddles or sieves, &c.; the finer sorts are put to use in the construction of sieves, lanterns, flour-dressing machines, paper-making machinery, screens for windows, safety lamps, &c. On a principle similar to that of the safety lamp, Aldini has contrived a wire armor for firemen, which, though light, is very nearly flame-proof. By pressing sheets of wire gauze in moulds, the shape of which they retain, and finishing off their edges with hoops or rings, these are formed into dish covers, baskets, and other useful and ornamental articles. The wire in bird cages, fenders, and other like articles is often specially plaited or woven in forming them, so that, as in the case of the making of baskets, they admit of a great variety of construction and ornamentation. Knitting and sewing needles and pins are at first cut from wire expressly prepared for such manufacture, that for the first two being of steel; and some of the finest sorts of steel wire are consumed in making the hair springs of timepieces. A very important use of steel wire is its application in the way of the so called "strings" of pianos. Spangles, or paillettes, which are small flat disks of metal with an opening in the centre, and used for ornamenting garments, are formed of wire, by twisting this in a spiral manner round a rod of suitable size, cutting so as to obtain as many single coils or rings, and then flattening these with a hammer upon a smooth anvil. Gold and silver wires are much used in the production of filigree work. In forming this, the wires of the two sorts are woven, plaited, or otherwise in-worked, so as to produce festoons, flowers, or other ornaments; while the two wires are at certain points so fused into little balls in which they both appear as to produce a very pleasing effect. This work, which was long since much in vogue for small ornamental articles and decorations, has now nearly fallen into disuse.—For the making of wire into wire rope, and in reference to the comparative strength and some of the uses of such rope, see the articles Rope and Bridge. It has been observed that when iron wire is subjected to a red heat, its tensile strength is greatly reduced, while under like conditions that of iron chain remains quite unimpaired. To account for the former fact, it had been supposed that, in the process of drawing, the surface portion of the wire becomes condensed or consolidated in such a way as to give it, in its ordinary state, that greater relative strength which, section for section, drawn wire is known to possess over the iron bars or rods from which it is made. In order to test the correctness of this opinion, Mr. John Daglish ("London Engineer," No. 266) has made several series of experiments; and he finds that heating makes but a slight change in the specific gravity of the wire, sometimes increasing and sometimes diminishing it; while the specific gravity of hard-drawn wire (7.58) is less than that of forged iron (7.74), so that, though the latter has the less tensile strength, it is really the more consolidated. He concludes that condensation of the material of cold-drawn wire is not the cause of its increased strength, and that the injurious effect of heating is not due to what has been called the "opening of the pores" of the metal; but that the difference arises through some change in the molecular structure of the iron not attended by change of bulk, and so not sensible in any way.—For brief descriptions, with drawings, of machines for wiring tin, sheet iron, and other ware, for wire-covering, and the manufacture of wire rope, see "Appleton's Dictionary of Machines," &c. (New York, 1857). See also Beckmann's "History of Inventions," Holland's "Manufactures in Metal" (Lardner's "Cabinet Cyclopædia," vol. ii.), and Hebert's "Engineer's and Mechanic's Encyclopædia."

WIRE WORM, a name applied to the myriapod animals of the genus *iulus* (Latr.), to the larvæ of several of the spring beetles, and to the caterpillars of many owlet moths of the family *agrotididæ*, the last more properly called cut-worms. (See Cut-Worm.) The characters of the order of myriapods have been sufficiently given under Centipede. The genus *iulus* may be taken as the type of the sub-division *chilognatha*, popularly called millepedes from the great number of feet. The body is long and cylindrical, consisting of numerous horny, arched segments, most bearing 2 pairs of feet ending in small single hooks, the last having none; antennæ short and 7-jointed; jaws rudimentary, suited for feeding on soft or decaying vegetable substances instead of the living prey of the chilopod centipedes. Notwithstanding the numerous legs, their movements are very slow and worm-like; when in danger the body is rolled into a spiral ball; they undergo a kind of metamorphosis, having at first only 3 pairs of feet, and attain their full growth only after several moultings extending over a period of 2 years, showing an affinity to the insects proper; the reproductive season is in Europe from December till about the middle of May; they lay a great number of eggs in the ground. They are common in damp earth and moss, and sometimes on or under the bark of trees; they are harmless animals, unlike the centipedes, and are actually beneficial to man in warm climates by consuming decomposing vegetable substances; they have been considered injurious to vegetation in temperate regions, probably without sufficient foundation, and it has been recommended to steep grain in copperas water and other astringent solutions before planting, to roll the seed in lime or ashes, and to mix salt with the manure, to prevent their depredations. The pigmy wire worm (*I. pusillus*, Say), common in the middle states, is ½ inch long, with 45 smooth segments, flesh-colored with a black patch at the side of each segment; it is found principally under the bark of trees. The Canada wire worm (*I. Canadensis*, Newport), so common in Canada and about the falls of Niagara, is 1½ inches long, with 43 smooth shining segments; it is reddish flesh-colored, with black lateral spots beneath a longitudinal series of white patches. In Europe the most common are the *I. sabulosus* and *terrestris* (Linn.), about 1¼ inches long, of a brownish color, variegated with yellowish, and with about 120 legs on a side. The largest species is the *I. maximus* (Linn.), 6 or 7 inches long, and a native of woods and retired places in South America.—The larvæ of the spring beetles (*elater*, Linn.) are called wire worms from their slenderness and hardness; they are said to live in the larva state 5 years, during most of which time they feed on the roots of wheat, rye, oats, and grass, causing a great annual diminution and sometimes nearly a total destruction of the crop; they are especially injurious in gardens recently converted from pasture lands. The best known European wire worm is the *elater* (*agriotes*) *segetis* (Bierk.), the *cataphagus lineatus* (Steph.) according to some entomologists being the same; the larva when full-grown is about 7 lines long, very narrow, yellowish, hard and shining, with 12 segments, the last 2 indented with dark specks, head brown, and end of jaws black; it is very destructive to grain and culinary vegetables; moles and pheasants destroy great numbers of them; in England it is the custom to strew slices of potatoes and turnips in the infested places at night, and in the morning to collect and destroy the grubs which congregate upon them; the ground may also be ploughed, when the crows and other birds will pick up the grubs. There are several of these larvæ in America in land newly broken up, but fortunately their mischief as yet is chiefly confined to wood. The *E.* (*agriotes*) *mancus* (Say) is about ½ inch long, stout, dark brown covered with dirty yellowish gray hairs, and punctured thickly above; from April to June numbers may be seen among the roots of grass and on rails and fences; the larvæ have 6 legs on the first 3 segments, and beneath the tail a short retractile wart or prop-leg; they deserve the attention of farmers, especially in grain regions, and hints for their destruction may be derived from the above methods employed in Europe.

WIRT, a N. W. co. of Virginia, bounded N. by Hughes river, and intersected by the Little Kanawha; area, 298 sq. m.; pop. in 1860, 3,751, of whom 23 were slaves. The surface is very hilly and the soil generally fertile. The productions in 1850 were 98,291 bushels of Indian corn, 22,910 of oats, 25,230 lbs. of butter, and 1,097 tons of hay. There were 2 grist mills, 7 saw mills, 13 churches, and 600 pupils attending public schools. Iron ore and bituminous coal are abundant. Capital, Elizabeth.

WIRT, William, an American jurist and author, born in Bladensburg, Md., Nov. 8, 1772, died in Washington, D. C., Feb. 18, 1834. His father was a native of Switzerland, his mother of Germany. Left an orphan at the age of 8, he was brought up under the care of an uncle, and at 15 had acquired sufficient education to become a private tutor. After a year and a half thus employed, he began to study law, was admitted to the bar in 1792, commenced practice at Culpepper Court House, Va., married in 1795, and took up his residence with his father-in-law, Dr. Gilmer, near Charlottesville. In 1799, after the death of his wife, he removed to Richmond, was elected clerk of the house of delegates, and in 1802 received from the legislature the appointment of chancellor of the eastern shore of Virginia, an office which he soon resigned in order to return to the bar at Norfolk. In 1803 he published in the "Richmond Argus" his "Letters of a British Spy," purporting to be papers left at an inn by an English member of parliament travelling in Virginia. They consist principally of sketches of prominent public orators, with remarks on eloquence and some pages of local description, and proved extremely popular, having passed through 9 or 10 editions in book form. In the following year Mr. Wirt published in the "Richmond Enquirer" a series of essays under the title of "The Rainbow." He established himself at Richmond in 1806, and represented that city in the Virginia house of delegates in 1807–'8. In the prosecution of Aaron Burr he was retained to assist the United States attorney, and in the course of the trial displayed a learning and eloquence which established his reputation as one of the foremost lawyers of the country. A series of papers somewhat in the style of the "Spectator," commenced by him and several of his friends in 1810 under the title of "The Old Bachelor," appeared in 33 numbers of the "Richmond Enquirer," and afterward in book form. As early as 1804 he had begun his "Sketches of the Life and Character of Patrick Henry," which after various difficulties was completed in 1817, and immediately took rank as one of the most popular biographies ever written in America. Mr. Gallatin referred to it as "the most masterly handling of the pen of biography" he had ever met with. In 1816 Mr. Wirt was appointed by President Madison attorney of the United States for the district of Virginia, and in 1817 by President Monroe attorney-general of the United States. He retained this office 12 years, and on his retirement removed to Baltimore, where he passed the rest of his life in the practice of his profession. He delivered in 1826 in the hall of representatives in Washington a eulogy on Adams and Jefferson. In 1832 he was the candidate of the anti-masonic party for president of the United States. His life has been written by J. P. Kennedy (2 vols. 8vo., Philadelphia, 1849).

WIRTH, Johann Ulrich, a German philosopher, born at Dizingen, Würtemberg, April 17, 1810. He studied philosophy and theology at Tübingen, and in 1836 published, in reply to Justin Kerner, *Theorie des Somnambulismus.* He was soon after elected pastor of the parish of Kleingartach. In 1841–'2 he published his *System der speculativen Ethik* (2 vols., Heilbronn), and in 1845 *Die speculative Idee Gottes.* Since 1852 he has been associated with J. H. Fichte and H. Ulrici in editing the *Zeitschrift für Philosophie und philosophische Kritik*, the organ of the Hegelian school of philosophy.

WISBY, Laws of. See Law Merchant, vol. x. p. 357.

WISCASSET, a township, port of entry, and the shire town of Lincoln co., Me., on the right bank of Sheepscott river, 16 m. from its mouth, and 42 m. N. E. from Portland; pop. in 1860, 2,318. Its inhabitants are engaged in commerce, the fisheries, ship building, and agriculture. It has a good harbor, with water enough for vessels of the largest class, and seldom obstructed by ice. Previous to 1807 it was one of the most flourishing seaports in Maine. The village is pleasantly situated, and has 3 churches (Congregational, Episcopal, and Methodist), a bank, 8 public schools, and an academy. The town was first settled in 1730.

WISCONSIN, one of the north-western states of the American Union, the 17th admitted under the federal constitution, situated between lat. 42° 30′ and 47° N., and long. 87° 30′ and 92° 30′ W. It is bounded N. by the British possessions, E. by Michigan, S. by Illinois, and W. by Iowa and Minnesota. Lakes Superior and Michigan, two of the largest bodies of fresh water on the globe, form portions of the northern and eastern boundary lines, and the Mississippi river flows on the western border. Extreme dimensions of the state, both N. and S. and E. and W., 300 m.; area, 56,000 sq. m., or 35,840,000 acres. The state is divided into 58 counties, viz.: Adams, Ashland, Bad Axe (name changed to Vernon in 1862), Brown, Buffalo, Burnett, Calumet, Chippewa, Clark, Columbia, Crawford, Dallas, Dane, Dodge, Door, Douglas, Dunn, Eau Claire, Fond du Lac, Grant, Green, Green Lake, Iowa, Jackson, Jefferson, Juneau, Kenosha, Kewaunee, La Crosse, Lafayette, La Pointe, Manitowoc, Marathon, Marquette, Milwaukee, Monroe, Oconto, Outagamie, Ozaukee, Pepin, Pierce, Polk, Portage, Racine, Richland, Rock, Sauk, Shawana, Sheboygan, St. Croix, Trempeleau, Walworth, Washington, Waukesha, Waupacca, Waushara, Winnebago, and Wood. Madison, situated on the "Four Lakes" in Dane co., is the capital, and Milwaukee on Lake Michigan is the chief city and commercial emporium; there are 17 other incorporated cities and 18 villages whose population exceeds 1,000; the principal (with their population in 1860) are: Racine, 7,826; Janesville, 7,705; Oshkosh, 6,056; Watertown, 5,307; Fond du Lac, 4,418; Sheboygan, 4,266; Beloit, 4,050; La Crosse, 3,714; Kenosha, 3,196; Mineral Point, 3,193; Manitowoc, 3,065; Portage City, 2,877; Beaver Dam, 2,773; and Whitewater, 2,702. The population of Wisconsin in 1830 was 3,245; in 1840, 30,945; in 1850, 305,391; in 1855, 552,109; and in 1860, 776,455; showing an increase from 1830 to 1840 of 854 per cent., from 1840 to 1850 of 887 per cent., and from 1850 to 1860 of 154 per cent. Ratio to the entire population of the United States about as 1 to 40, or 2½ per cent.; population per sq. m., 14. Wisconsin is the 13th state in amount of population, and is entitled to 6 representatives in congress. Of the population in 1850, there were 164,351 males and 140,405 females; colored males 305, females 270; born in Wisconsin 63,015, and in other states of the Union 134,897; in Great Britain 47,841, in British America 8,277, and in Germany 34,159; total of foreign birth, 106,695, or about 35 per cent. There were 40,865 engaged in agriculture, 1,177 in manufactures, 51,824 in commerce and trades, and 1,453 in the learned professions. Number of births during the preceding year, 10,427; of deaths, 2,903. The ratio of deaths to the total population was 1 to 105, being lower than in any other state in the Union except Oregon and Minnesota. In 1861 there were in the state 219 deaf and dumb, 111 blind, 120 insane, and 110 idiotic.—There are no mountains, properly speaking, in Wisconsin; the whole surface may, with slight exceptions, be considered one vast plain, varied only by the cliffs bordering the rivers and lakes, and the moderate undulations called "rolling." This plain lies at an elevation of from 600 to 1,500 feet above the ocean; the dividing grounds between the valleys usually attain but a slight elevation above the surrounding country, the waters of a lake or marsh being often drained in opposite directions to reach the ocean at widely different points. The highest lands are those along the sources of the tributaries of Lake Superior, which, near the Montreal river, are 1,700 to 1,800 feet above the sea level, gradually diminishing westward to about 1,100 feet at the W. line of the state. From this great water-shed the land slopes rapidly toward the lake, and more gradually toward the S. to the lower Wisconsin river, whence there is another slope toward the S. drained mostly by the waters of Rock river and its tributaries. At Portage City the Fox and Wisconsin rivers approach so nearly that their waters are often commingled; they are connected by a canal, from which there is a descent of 195 feet to Green bay and 171 feet to the Mississippi at Prairie du Chien. There are several prominent elevations, called mounds, in the S. W. portion of the state, which formerly served as guides to the traveller in his course; among these the principal are the Blue, 1,729 feet above the sea; the Platte, 1,281 feet; and the Sinsinnewa mounds, 1,169 feet. The cliffs along the E. shores of Green bay and Lake Winnebago extend as far as Iron Ridge in Dodge co., and form a bold escarpment, not unlike the "mountain ridge" of western New York in general character and geological age. From this ridge the country slopes gradually E. to Lake Michigan. On this slope there is a remarkable series of drift hills and circular depressions called "pot-ash kettles," extending in a S. S. W. direction from the peninsula E. of Green bay into the state of Illinois; one of the highest peaks in Washington co. is 1,400 feet above the sea. The greatest depression in the state is the surface of Lake Michigan, which is 578 feet above the sea. The Mississippi river at the mouth of the Platte, 8 m. above Dubuque, is 591 feet; at Prairie du Chien, 602; at La Crosse, 632; and at the mouth of the St. Croix river (Prescott), 677; and it therefore has a descent in this part of its course of 5 inches per mile. The descent of Fox river from Lake Winnebago to Green bay is 170 feet, forming one of the most valuable series of water powers in the West. No part of the United States exceeds the valley of the upper Mississippi in the beauty and grandeur of the wild natural scenery. A series of picturesque slopes and rocky bluffs, with rounded hills, wholly or partially wooded, affords, especially when reflected from the surface of the river, ever varying objects of interest.—The Mississippi forms the western boundary of the state for about 200 m., and in that distance receives the waters of the Wisconsin, Black, Chippewa, and St. Croix, all large streams, draining respectively areas of 11,000, 2,200, 9,000, and 3,600 sq. m. The other principal rivers are the Rock river, another tributary of the Mississippi; the St. Louis, Bois Brulé, Bad, and Montreal, flowing into Lake Superior; the Menomonee, Peshtego, Oconto, Pensaukee, and Fox, with its tributary the Wolf, flowing into Green bay; and the Manitowoc, Sheboygan, and Milwaukee, tributaries of Lake Michigan. Innumerable smaller streams water almost the whole surface; their waters are usually clear, originating in springs and small lakes. Many of those at the north are precipitated over rocky barriers, forming beautiful cascades or rapids; and at the south they often run through narrow rocky gorges called "dells." The Mississippi is navigable for steamboats along the whole border of the state; the Wolf and Fox rivers are navigable for small steamboats, the latter having been artificially improved; and many of the streams afford ample water power for manufacturing purposes. Beside the two great lakes, Superior and Michigan, already mentioned, there are numerous others, especially in the central and northern portions of the state; they are from 1 to 20 or 30 m. in extent, usually with high, picturesque banks, and deep water, abounding in fish. The greatest numbers are found near the sources of the Chippewa and St. Croix rivers, the whole surface being studded with them, so that in some districts it would be difficult to travel 5 m. without finding a lake. A kind of wild rice (*zizania aquatica*) grows in the shallow waters, affording sustenance to innumerable water birds. The largest lake in the state is Lake Winnebago, 28 m. long and 10 m. wide, covering an area of 212 sq. m.; it is daily navigated by small steamboats from Fond du Lac to Menasha, situated respectively at its S. and N. extremities. The other principal lakes are St. Croix, Pepin, Pewaugan, Pewaukee, Geneva, Green, Koshkonong, the Four Lakes, &c.—The geology of the state is simple, the series of rocks extending from the primary and oldest silurian only to the devonian. In the central and northern portions, granite, gneiss, talcose slates, syenitic and other primary and azoic rocks, with metamorphic sandstones, conglomerates, trap dikes, &c., prevail, extending from the vicinity of Lake Superior to the lower rapids of the Chippewa, Black, Wisconsin, Wolf, and Menomonee rivers. This district has a length from E. to W. of 240 m.; its greatest breadth, near the middle of the state, is 160 m. These rocks have been but little examined scientifically; they occur in ranges running in a W. S. W. and E. N. E. direction, and in dome-shaped masses. One of these ranges in Douglas co. presents the characteristics of the copper ranges in the upper peninsula of Michigan; another in Ashland co., known as the Penokee Iron range, abounds in magnetic iron ore not yet worked. It is chiefly in this primary district that pine timber is obtained in such immense quantities; it is the most elevated part of the state, contains the greatest number of small lakes, and is the least settled and improved. Resting upon the edges of the strata of primary rocks, the Potsdam sandstone is found, forming a belt on almost every side, from 10 to 60 m. in breadth. The general form of the sandstone district is that of a crescent, its horns on the Menomonee and St. Croix rivers, and its greatest breadth in the region of the Wisconsin river, near the middle of the state. The sand is generally pure, frequently suitable for the manufacture of glass. It often contains calcareous beds with fossil remains of much interest, representing the animals of the oldest or primordial fauna; the decay of these beds mingling with the sand renders the soil fertile. This rock often forms bold cliffs and prominent peaks; the strata are irregular, contorted, and variously curved, indicating gradual deposition from currents of water. Next above the Potsdam sandstone is a heavy deposit of limestone, locally known as the lower magnesian limestone; it contains copper ores in a few places, and is supposed to contain also lead. This is succeeded by the upper sandstone, having many of the characteristics of the Potsdam, upon which are the blue and Galena limestones (or dolomites), corresponding with the Trenton of New York, chiefly in the latter of which are found, in the S. W. part of the state and adjoining portions of Iowa and Illinois, the fissures containing deposits of lead, zinc, and copper ores. In this district, though yielding large quantities of lead, the soil is rich and productive. These mines were first discovered by Le Sueur in 1700, but attracted little attention until 1826, from which time the quantity of lead produced increased rapidly until 1845; and they continue to yield a supply equal to about one eighth of the quantity produced in the whole world. Most of the lead is sent to Galena, Ill., whence as much as 24,000 tons has been shipped in one year. In the eastern portion of the state, limestones of the Niagara group are found underlying the surface, from the entrance of Green bay along the shore of Lake Michigan to Illinois, affording materials for building and for the manufacture of quicklime. Near Milwaukee, covering a limited space, rocks of the devonian age occur, containing remains of the fish of a very ancient ocean. The limestone district of Wisconsin includes nearly all those portions lying S. and E. of the Fox and lower Wisconsin rivers, with considerable tracts along the Mississippi and W. of Green bay. All these rocks are older than those of the coal formation, and lie below them; hence no coal is found in this state. With the exception of the lead region, and the counties lying along the Mississippi river, the state is covered with a heavy deposit of clay, sand, gravel, and bowlders or "drift;" and it is generally this deposit rather than the underlying rocks that gives character to the soil. Among the pebbles masses of native copper are often found, associated with silver, clearly showing that this drift had its origin at the north. The drift, in a modified form, furnishes the clay from which cream-colored bricks are made, of great beauty and durability. A geological survey of the state has been in progress for several years, and the first volume of results was published in 1862.—Lead ore is the most important mineral product of the state, found chiefly in the counties of Grant, Lafayette, and Iowa; it is mostly the sulphuret (galena), though the carbonate (called white mineral) often occurs. Iron ores are found in great quantities and of easy access at Iron Ridge in Dodge co., at Ironton in Sauk co., at the Black river falls in Jackson co., and in the Penokee Iron range, in Ashland co. near Lake Superior. Magnetic ores also occur in the primary region in the vicinity of the Menomonee river, in the N. E.

part of the state. The ore has been smelted only at Iron Ridge, Ironton, and Black River Falls. Native copper is found in limited quantities in the N. part of the state; and copper ores have been discovered in fissures in Iowa and Crawford counties. Two ores of zinc, associated with the lead, have been smelted to a small extent at Mineral Point. Limestone suitable for polishing (or marbles) has been found; the drift affords clay suitable for the coarser wares and for brick; beds of peat and of shell marl occur in the marshes and beds of ancient lakes. Gypsum has been found on Sturgeon bay. Carnelians and agates are picked up among the pebbles of the lake shores, and are found associated with the trap rocks.—The mean annual temperature of the southern and more settled portion of the state is 46° F.; mean temperature of winter, 20°; of spring and autumn, 47°; and of summer, 72°. The waters of Lake Michigan materially affect the temperature of the counties along its shores, moderating both the excessive heat of summer and the cold of winter; and hence the temperature of January at Milwaukee is found on the Mississippi river half a degree of latitude further S., and that of July at St. Paul, 2° further N. The N. part of this lake only is covered with ice in the winter, which never reaches as far S. as Milwaukee, where the navigation continues open during the whole year. The Milwaukee river remains closed on an average from Nov. 30 to March 18, or 107 days. Snow always falls in the N. part of the state before the occurrence of heavy frosts, protecting the ground and the roots of plants from freezing, and accelerating the growth of vegetation in the spring. In the S. part of the state snow often lies to the depth of 12 to 18 inches, but some winters pass almost without snow. The prevailing winds of spring are from the N. E.; of summer, S. E.; of autumn and winter, W. The winters are cold, mostly uniform, with many clear dry days; the springs are backward; the summers short and hot; the autumns mild and almost always pleasant. The annual quantity of rain and melted snow is about 32 inches. The barometer varies in its extremes from 28 to a little above 30 inches, the mean being about 29.5 inches. The sudden changes indicating great storms appear on the Mississippi 6 or 8 hours before they reach Lake Michigan. Very numerous meteorological observations have been made in Wisconsin, but they have not yet been collated and studied.—An enumeration of the animals of Wisconsin recently published indicates 62 species of mammals, 300 of birds, 19 of reptiles, and 90 of mollusks or shells. The buffalo, wild turkey, and some other species are now extinct; the elk, deer, bear, beaver, fisher, wolf, otter, wild cat, porcupine, &c., are still found; and among the smaller quadrupeds are the striped gopher, bat, mole, squirrel, pouched rat, &c. The larger birds are the golden and bald eagle, great white owl, quail, partridge; the spruce, willow, prairie, and sharp-tailed grouse; woodcock, wild goose, ducks in great numbers and varieties, pelican, loon, &c. Pigeons are abundant. Great quantities of fish are annually caught in Lakes Superior and Michigan, as well as in the smaller lakes and rivers; among these the most important are the white fish, trout, siskowet, maskinonge, pickerel, and perch; the most curious are the bill-fish and the spoonbill sturgeon. The insects and lower classes of animals have not yet been studied. The published catalogue of Wisconsin plants contains about 1,300 species, exclusive of the lower orders; of these, 60 are forest trees, and 130 shrubs; 280 have reputed medicinal virtues; 100 belong to the family of grasses, and 150 to that of compound flowering plants (sunflowers, &c.), which occur so abundantly in the prairies and open districts as often to give a yellow hue to the landscape in the latter part of the flowering season. One of these, called the compass plant (*silphium terebinthinaceum*), when growing in open exposed situations, has the lobes of its large palmate radical leaves pointed toward the N. and S. Nearly all the N. half of the state abounds in pine, balsam, hemlock, and other cone-bearing evergreen trees, of which the white pine, usually towering far above the other trees of the forest, is the most common. The great prairies of Illinois extend into several of the southern counties of Wisconsin, between which and the heavily timbered districts there is a region of openings, in which the bur oak (*quercus macrocarpa*) chiefly abounds. A line drawn from Racine on the W. shore of Lake Michigan in a N. W. direction, will mark the boundaries between the openings and the heavily timbered lands. The red oak (*Q. rubra*) is the only species of oak that extends as far N. as the shores of Lake Superior.—The ancient earthworks, so abundant in the western states, assume in Wisconsin imitative forms, being intended to represent the human figure, or that of some of the more familiar animals. These are usually combined and associated with circular mounds and ridges running in straight or curved lines. The most important and best known are those at Aztalan in Jefferson co., where a space of 17⅔ acres is enclosed by a wall of earth and burnt clay (not proper brick), supported at regular intervals by mounds or buttresses. This is supposed to have been one of the "sacred enclosures," intended doubtless for some religious ceremonial purposes. Fragments of rude pottery are often found, with arrow heads of flint, and stone axes, pipes, &c.—Agriculture is the chief object of industry, and is encouraged by legislative appropriations of $3,000 annually to the state agricultural society, and $100 to each of the county societies; the state society holds an annual fair or exhibition, and has published 6 volumes of transactions. In 1861 there were 36 county agricultural societies holding fairs, and $7,165 was paid in premiums. The soil of the state is rich and varied, yielding abundant crops under proper culture. By a law of the state the assessors are required to collect annually the statistics of the crops of the preceding year. The chief items for the year 1860, and their value, are as follows: wheat, 27,316,306 bushels, $17,100,995; oats, 13,834,937 bushels, $2,171,292; Indian corn, 12,045,178 bushels, $2,953,578; hay, 692,872 tons, $2,695,802; potatoes, 8,713,902 bushels, $1,153,018; butter, 10,923,826 pounds, $1,198,904; cattle on hand, 554,903 head, $6,227,158; cattle slaughtered, 57,781 head, $1,154,304; swine on hand, 406,572, $1,095,688; swine slaughtered, 248,413, $2,504,213; horses and mules, 127,837, $6,226,079; making, with minor articles, the aggregate value of agricultural products $47,149,729. The U. S. census of 1860 shows an aggregate of 3,746,036 acres of improved and 4,153,134 acres of unimproved lands, and indicates that only about one fifth of the whole area of the state has been appropriated to farming purposes; the remainder is chiefly in the central and northern portions. The principal articles manufactured in 1860, and their value, were reported as follows: lumber, 355,055,155 feet, $2,362,558; shingles, 2,272,061 M., $1,134,834; boots and shoes, 299,354 pairs, $715,169; cabinet ware, $402,326; wagons, 7,454, $449,410; wood and willow ware, $329,755; leather, $146,177; paper, 97,360 reams, $143,565; value of lead raised from the mines, $264,757, smelted $188,880, manufactured $84,459; amount of capital invested in manufactures, $3,645,109.—Two main lines of railroads run across the state, from Milwaukee on Lake Michigan to the Mississippi river, which with a number of shorter ones have an aggregate length of 926 m., and cost about $34,000 per mile, as exhibited in the following table:

Name.	Termini.	Length.	Cost.
Milwaukee and Prairie du Chien	Milwaukee to Prairie du Chien	195	$7,500,000
" " " (branch)	Milton to Monroe	40	
La Crosse and Milwaukee	Milwaukee to La Crosse	200	6,800,000
Chicago and North-Western	Appleton to state line, south	143	6,088,722
Racine and Mississippi	Racine to Beloit	69	2,277,000
Milwaukee and Western	Milwaukee Junction to Sun Prairie	57	1,520,447
" " " (branch)	Watertown to Columbus	20	
Milwaukee and Horicon	Horicon to Berlin	42	1,381,391
Milwaukee and Chicago	Milwaukee to state line	40	1,883,965
Mineral Point	Mineral Point to Warren, on state line	32	1,634,700
Kenosha, Rockford, and Rock Island	Kenosha to Genoa	29	898,807
Beloit and Madison	Beloit to Evanston	27	891,000
Sheboygan and Fond du Lac	Sheboygan to Glenbulah	20	826,976
Wisconsin Central	Genoa to Elkhorn	10	330,000
Fox Lake	Fox Lake to La Crosse railroad	2	15,000

The gross earnings of these railroads for the year 1860 were $2,512,891; for 1861, $3,476,184, showing an increase in one year of $963,293. The Detroit and Milwaukee railroad connects the Wisconsin system of railroads directly with the great lines running east through Canada, New York, &c. Steamships ply regularly across Lake Michigan in connection with this route during the summer, and propellers in the winter. The shipments by this route in 1861 were 224,632 bbls. flour, 30,285 bbls. beef, 850,625 lbs. wool, 582,429 lbs. hides, &c., the whole amount being 33,723 tons. But the surplus products of the state are chiefly exported by water on the great lakes, from Milwaukee to Buffalo, Oswego, and other ports below, or directly to Europe. The shipments of wheat, including flour reduced to its equivalent in wheat, during the year 1861, were as follows: from Milwaukee, 16,672,865 bushels; from Racine, 910,767; from Green Bay, 448,722; from Kenosha, 384,000; from Sheboygan, 219,262; from Ozaukee, 69,610; from other ports, 51,310; total, 18,756,536 bushels. Some of the products of the interior are taken to Chicago over the roads leading to that city; and the lead smelted in the western counties is mostly shipped from Galena in Illinois. Such are the facilities for transporting these products, by means of propellers and sail vessels on the lakes, that prices are but little below those of eastern markets. American shipping having the privilege of free navigation of the St. Lawrence to the ocean, efforts have been made to open a direct trade from Milwaukee to Europe. The first voyage was made in 1856; a second in 1859, with a cargo of hard lumber; the third in 1860, with a cargo of 16,643 bushels of wheat; and in 1861 four vessels took out 66,595 bushels of wheat. All these vessels returned safely to the lakes.—The government of the state is in accordance with the constitution adopted Feb. 18, and ratified by a vote of the people March 14, 1848. By it certain personal rights are secured to every citizen, slavery prohibited, adequate remedies for wrongs secured, the crime of treason clearly defined, leases of land for agricultural purposes longer than 15 years prohibited, and aliens allowed to hold and convey property; all white male citizens and persons who have declared their intention to become citizens, who are 21 years of age and who have resided in the state one year, have the right to vote. The legislative power is vested in a senate of 33 members, one half elected annually for two years, and an assembly of 100 members elected annually. The legislature sits at Madison on the 2d Wednesday in January; the members receive $2.50 per day and mileage, and can hold no office created, or the emoluments of which are increased, during their term; they cannot grant divorces nor authorize lotteries. The governor (salary $1,200) holds his office for two years; he must be a citizen of the United States and a voter in the state; he may grant pardons and reprieves, and has a veto power over the enactment of laws. The lieutenant-governor acts in the absence or disability of the governor, and presides over the proceedings of the senate, when his pay is $5 per day. The other elective state officers are secretary of state, treasurer, attorney-general, superintendent of public instruction, bank comptroller, and state prison commissioner. Sheriffs and other county officers are elected for two years. The annual elections are held on the Tuesday succeeding the first Monday in November. The senate is a court for the trial of impeachments; the supreme court consists of a chief justice and two associates, and has appellate jurisdiction only, without jury trial; the circuit courts (now 12) have original powers in all civil and criminal matters and appellate jurisdiction from inferior courts, may issue writs of *habeas corpus*, &c., and have a general control over inferior courts. Judges are elected for 6 years, and have a salary of $2,500 per annum; they can receive no fees, and must reside within their circuits. The supreme court is held annually at Madison; the circuit courts twice or more in each year. The terms of office of the supreme court are so arranged that one judge goes out every two years. Justices of the peace are elected in the towns for two years, and have jurisdiction in matters not involving the title of lands, nor more than $100. Judges of probate are elected in the several counties, and in those of Milwaukee, La Crosse, Douglas, and La Pointe, they have certain additional powers, constituting county courts. The chief sources and amount of revenue for the year 1861 were: from state tax and tax on suits at law, $245,143.18; from bank tax, $78,174.24; railroad licenses, $25,056.29; licenses to insurance companies, $14,290.56; and from miscellaneous sources, $16,166.87. The chief items of expenditure were: for salaries of state officers, judges, &c., $81,403.95; expenses of the regular session of the legislature, $75,972.26; for state prison, $29,199.87; current expenses of institutions for deaf and dumb, blind, insane, reform schools, &c., $32,300; for addition to capitol at Madison, $27,261.61; for building hospital for insane, $67,638.47; interest on state loan, $18,973.66; agricultural societies, $8,987.30; state historical society, $1,000; geological survey, $7,411.83; township school libraries, $18,406.25; miscellaneous and special appropriations, $50,412.74; total expenditures, $418,960.44; balance in the treasury, Jan. 1, 1862, $16,568.53. The state has several trust funds, which were on Jan. 1, 1862, as follows:

Funds.	Productive capital.	Unproductive capital.*	Income for year up to Sept. 30, 1861.
School fund..........	$2,124,019 62	$943,268 57	$151,109 41
University fund......	248,092 86	91,366 39	18,397 70
Swamp land fund.....	316,104 87	1,563,234 99	22,543 98
Drainage fund........	79,720 36	21,547 03	5,551 58
Total..............	$2,767,937 71	$2,619,416 98	$197,602 67

* The estimated value of lands remaining unsold.

The constitution prohibits the creation of a state debt beyond the sum of $100,000, except in case of invasion, insurrection, &c. A loan of $1,200,000 was authorized by the legislature in 1861 to aid in the suppression of the southern insurrection, and under this authority bonds to the amount of $950,000 have been issued, making the total state debt $1,050,000. The quantity of land assessed in 1861 was 17,341,696 acres, valued at $95,996,016; value of city and village lots, $31,651,537; of personal property, $24,092,610; aggregate equalized value of taxable property in the state, $180,984,354; amount of state taxes for all purposes levied, $340,492.—The school fund is derived from the proceeds of sales of lands granted to the state by congress, being the 16th section (or square mile) of every township (of 36 sq. m. each) in the state; the grant of 500,000 acres made on the admission of Wisconsin as a state in 1848; one fourth of the proceeds of the sales of swamp lands; 5 per cent. on the proceeds of the sales of government lands; and certain penalties, fines, and forfeitures. The proceeds are annually distributed, and (with the local taxes) support the schools, rendering them entirely free to all the children of the state. The number of school districts in 1861 was 4,558; number of children between 4 and 20 years of age, 299,133; number attending public schools, 198,443; estimated number in private schools, 8,000; number of teachers, 6,000; average monthly wages of teachers, male $23, female $14.62; amount of state fund apportioned, $131,636; amount raised by tax, $723,130; number of school houses, 4,211; valuation of school houses, $1,302,732. One fourth of the proceeds of sales of swamp lands granted to the state in 1850 is appropriated for the purpose of normal instruction, under the direction of a board of trustees; a part of it is expended in holding teachers' institutes in different parts of the state, and the remainder divided among colleges and academies in which normal instruction is given. In 1861 this fund amounted to $6,216; number of institutes held, 27; amount distributed to colleges and academies, $1,825. The state university at Madison is supported by the interest of funds derived from the sale of lands granted by congress for that purpose. It was founded in 1851, and in 1862 had 7 instructors, 180 students, and 4,000 volumes in the library. Lawrence university at Appleton (Methodist) was founded in 1849, has property valued at $154,000, has 8 instructors, 149 students, and 4,500 volumes. Beloit college (Congregational), founded in 1847, has property valued at $139,226, 8 instructors, 143 students, and 4,000 volumes. Several other institutions have been organized; among them Carroll college at Waukesha, Racine college (Episcopal), Galesville university, Milwaukee female college, and the Wisconsin female college at Beaver Dam. The chief public libraries in addition to those just mentioned are the state library at Madison, with 6,000 volumes;

the library of the state historical society at Madison, 8,500 volumes; and that of the young men's association at Milwaukee, 4,600 volumes. An institution for the education of the blind was opened near Janesville in 1850; the number of pupils in 1861 was 45; annual expense, including improvements and repairs, $9,849. To pupils from the state no charge is made for board or tuition. The institution for the deaf and dumb was established at Delavan, Walworth co., in 1852; it has 86 pupils; annual expense, $13,173. All the deaf and dumb of the state between the ages of 10 and 30 are entitled to an education without charge for tuition or board; and to prepare them to support themselves, they are required to work a portion of each day at some useful occupation or trade. A hospital for the insane is in progress of construction on the N. shore of "Fourth Lake," near Madison; although the building was unfinished, patients were admitted in 1860; whole number admitted 145, of whom 103 remain; annual expense, $21,602. The reform school for juvenile delinquents was opened at Waukesha in 1860; whole number of pupils admitted up to Sept. 30, 1861, 67; annual expense, $7,022. Boys under 15 and girls under 14 years of age are committed to this school for any crime, are instructed in reading, writing, arithmetic, and geography, and are required to work during certain hours. The farm contains 70 acres. The state prison was established at Waupun in 1851, since which time 704 convicts have been admitted; 326 have worked their full term, 225 were pardoned, and 16 removed by death, &c., leaving 137 imprisoned Sept. 30, 1861; expenses for the year, $37,948, of which there was paid by the state $24,000. A general banking law, having been previously authorized by a vote of the people, was passed in 1852, under which there were on Sept. 30, 1861, 107 banks with an aggregate capital of $6,507,000, and a circulation of $2,780,267. The circulation is secured by the deposit of public stocks ($3,104,510) and specie ($76,491.13) in the state treasury.—The following table gives the statistics of the principal religious sects in Wisconsin:

Denomination.	Number of churches.	Value of church property.	Number of attendants.	Number of members.
Methodist Episcopal.	166	$231,958	65,000	21,372
Roman Catholic.....	241	224,000	200,000	....
Protestant Episcopal	36	28,000	7,000	2,143
Congregational......	147	...	8,000	2,650
Presbyterian........	123	29,000	7,500	3,455
Total............	713	$512,958	287,500	29,620

The number of newspapers published in the state is 104, of which 9 are daily; 2 dailies and several weeklies are in the German language, and the immigrants from Norway, Holland, and Wales have journals in their own languages.—The earliest explorers of the country now constituting the state of Wisconsin found the Chippewas on the borders of Lake Superior, at war with the Sioux (Dacotahs), on the head waters of the Mississippi. The Menomonees, Winnebagoes, Mascoutens, Miamis, and Kickapoos occupied other portions of the same district. At a later period the Potawatomies and the Sauk and Fox tribes were in possession. Several tribes have been removed from the state of New York to Wisconsin; of these the Brothertowns have thrown off the tribal government, and have been admitted to all the rights and privileges of citizens of the United States. The Menomonees still occupy lands assigned them on Wolf river, the Oneidas have a considerable reservation near Green Bay, and a few bands of Chippewas are permitted to remain on the shore of Lake Superior near La Pointe; but the main body of red men have disappeared. Nearly all the lands in the state have been purchased by the general government. The region W. of Lake Michigan was first explored and occupied by French missionaries and traders in 1639, and the country remained under the dominion of France until surrendered to Great Britain in 1763. During this time Green Bay, La Pointe, St. Nicholas (now Prairie du Chien), and other places were occupied; the Mississippi river was explored by Marquette in 1673, and a war was waged against the Outagamie and Fox Indians, to secure the right of way through Lake Winnebago. The navigation of the upper lakes was begun in 1679, when the Griffin made a trip from the Niagara river to Green Bay, and was lost on her return voyage. The laws of Canada governed the territory, and the British maintained their possession with a military force at Green Bay until 1796, when the Americans obtained the possession, and extended the provisions of the ordinance for the government of the North-West territory over this whole region. In 1809 Wisconsin was included in the territory of Illinois, and so continued until 1818, when Illinois became a state, and Wisconsin, still little better than a wilderness, was attached to Michigan for all purposes of government. Public attention was strongly directed toward this region in 1827 by discoveries of lead on the upper Mississippi, and in 1832 by the Indian troubles known as the Black Hawk war. So many emigrants had settled here, that in 1836 a separate territorial government was organized, which continued until the admission of Wisconsin into the Union in 1848.

WISDOM, Book of, the name of one of the so called apocryphal books of the Old Testament. In the Septuagint the book bears the title Wisdom of Solomon, and many of the early church fathers regarded Solomon as its author. This opinion still prevails in the Roman Catholic church, by which the book is held as canonical. It is regarded by almost all Protestant theologians as the work of an unknown Alexandrian Jew, compiled under the reign of one of the Ptolemies. The book consists of 3 parts: in the 1st (ch. i. to v.) the author enjoins wisdom to the rulers of the earth, and praises it as a guide to immortality; in the

2d (ch. vi. to ix.) he shows by what means wisdom may be obtained, and dwells on its essence and blessings; in the 3d (ch. x. to xix.) he reviews the effects of wisdom in the history of Israel. A few theologians have ascribed these 3 different parts to 3 different authors. The book was written in the Greek language. There are numerous special commentaries on it, among others by Bauermeister (Göttingen, 1828) and Grimm (Leipsic, 1837).

WISE. I. A new S. W. co. of Virginia, bordering on Kentucky, and drained by several small streams; area, about 250 sq. m.; pop. in 1860, 4,508, of whom 66 were slaves. The surface is hilly or mountainous, and the soil fertile. Iron ore and bituminous coal abound. Capital, Gladesville. II. A new N. co. of Texas, drained by the East fork of Trinity river; area, about 900 sq. m.; pop. in 1860, 3,160, of whom 128 were slaves. The surface is undulating and the soil fertile. Capital, Decatur.

WISE, Daniel, D.D., an American clergyman, born in Portsmouth, Eng., in Jan. 1813. He came to America at the age of 20, and having entered the Methodist ministry became editor of the "Zion's Herald" at Boston. He had previously edited the "Sunday School Magazine," the "Ladies' Pearl," the "Rhode Island Temperance Pledge," and "Forrester's Boys' and Girls' Magazine." As corresponding secretary of the Sunday school union, he now (1862) edits the "Sunday School Advocate" and all the books of the Sunday school catalogue. He has written a large number of books chiefly for young people. Among them are "The Path of Life," "The Young Man's Counsellor," "The Young Lady's Counsellor," "The Young Convert's Counsellor respecting his Church Relations," "Life of Ulric Zwingli," "Thirty Years from Home," "Precious Lessons from the Lips of Jesus," "Sacred Echoes from the Harp of David," and "Guide to the Saviour."

WISE, Henry Alexander, an American statesman, born at Drummondtown, Accomac co., Va., Dec. 3, 1806. His father, who was a lawyer and had been speaker of the house of delegates, died in 1812. His mother died in 1813. The young orphan was educated by his father's relatives, and in 1822 was sent to Washington college, Pennsylvania, where he was distinguished as a debater, and where he was graduated in 1825. He studied law at Winchester till 1828, when he went to Nashville, Tenn., married, and settled there in the practice of his profession. At the end of two years he returned to Accomac, where he has ever since resided, and in addition to an extensive practice as a lawyer was soon actively engaged in politics. He was a delegate in 1832 to the democratic national convention at Baltimore, where he advocated the nomination of Jackson as president, but refused to acquiesce in the nomination of Van Buren as vice-president. During the nullification excitement he published an address to the electors of the York district, in which he declared himself opposed on the one hand to the measures adopted by South Carolina, and on the other to the force bill and the president's proclamation, maintaining the doctrines of the Virginia resolutions of 1798, "that each state for itself is the judge of the infraction of the constitution and of the mode and manner of redress." In 1833 the Jackson party of the eastern shore nominated him for congress in opposition to the nullification candidate, and he was elected by 400 majority. After the election his antagonist challenged him, and the result was a duel in which the challenger's right arm was fractured. On the removal of the government deposits from the bank of the United States by order of President Jackson in 1833, Mr. Wise together with 16 other democrats in the house of representatives went over to the opposition. In 1835 and again in 1837 he was reëlected as a supporter of the principles of Judge White and John Tyler, who in 1836 had been candidates for president and vice-president in opposition to the regular democratic candidates, Van Buren and Johnson. He was at this time opposed to the "pet bank" system, as the scheme of the president was called, to the subtreasury, to the reference of abolition petitions to any committee, and to a protective tariff, and was a zealous advocate of the admission of Texas as a measure for strengthening slavery in the United States. In 1837 he acted as the second of Mr. Graves of Kentucky in a duel with Mr. Cilley of Maine, both members of congress, in which the latter was killed; an occurrence that created deep feeling in the country, and led to much denunciation of Mr. Wise, on whom the chief opprobrium of the affair rested for a time, although from subsequent disclosures it appears that he made some efforts to prevent the hostile meeting. The nomination of John Tyler by the whigs in 1840 as candidate for vice-president, in conjunction with Gen. Harrison as president, was largely due to Mr. Wise's management; and on the accession of Mr. Tyler to the presidency after the death of Gen. Harrison, his influence on the policy of the administration was very great, especially with reference to the bank question and to the annexation of Texas. In 1842 Mr. Tyler appointed him minister to France, but the senate rejected the nomination. He was subsequently appointed minister to Brazil, and in that capacity resided at Rio Janeiro from May, 1844, till Oct. 1847. In the presidential canvass of 1848 he supported the democratic candidate, Gen. Cass, and was chosen an elector. Two years later he was a member of the convention which revised the constitution of Virginia, and in 1852 he was again chosen a presidential elector, and gave his vote for Gen. Pierce. In Dec. 1854, he was nominated by the democrats as their candidate for governor, and immediately entered into a most animated canvass against the "know-nothings," who had just been organized in Virginia, and had nearly absorbed the whig party in that state. The contest commenced under the most unfavorable circumstances for Mr. Wise, but was conducted by him personally with exceeding energy and crowned with brilliant success. From January to May he traversed the state in all directions, travelling more than 3,000 miles, and making 50 speeches, though suffering greatly all the time from habitual illness. He was elected by upward of 10,000 majority. He was governor of Virginia at the time of the Lecompton controversy in 1857–'8; and though personally attached to President Buchanan, whose election he had advocated in 1856, he warmly joined with Senator Douglas in opposing that "schedule of legerdemain," as he termed the Lecompton constitution. In 1859 he published an elaborate historical and constitutional treatise on territorial government and the admission of new states into the Union, in which he upheld the doctrine of congressional protection of slavery in all the territories. Toward the end of Mr. Wise's term as governor occurred the seizure of Harper's Ferry by John Brown and his followers (see Harper's Ferry), and the execution of John Brown at Charlestown, Dec. 2, 1859, was one of the last acts of his administration. He was a member of the state convention which met at Richmond, Feb. 13, 1861, to consider the relations of Virginia to the federal government, and one of the committee on federal relations to whom the principal business of the convention was referred. Three reports were made by this committee on March 10. The majority report affirmed the doctrine of state rights, demanded a fair partition of the territories and equal rights therein, expressed the hope of a restoration of the Union, recommended amendments to the constitution, recognized the right of secession, and advised a conference of the border states. Mr. Wise presented another report, giving a list of demands, requiring both the general government and the seceded states to abstain from hostilities in the hope of a peaceable adjustment of difficulties, and insisting that the president should only maintain a sufficient number of men in the forts, arsenals, &c., to preserve the public property therein. A third report advised the immediate secession of the state. On April 10, the majority report being under consideration, Mr. Wise offered an amendment (which was lost) to the effect that all the forts, &c., in the limits of seceded states ought to be evacuated, for purposes of pacification. After the passing of the Virginia ordinance of secession, however, he entered heartily into the war, making a speech at Richmond, June 1, in which he advised the people to "take a lesson from John Brown," manufacture weapons from old iron, "or if possible get a double-barrelled gun and a dozen rounds of buckshot, and go upon the battle field with these." Shortly afterward he was appointed a brigadier-general in the confederate army, and ordered to western Virginia. He occupied the Kanawha valley, to a point within a few miles of the mouth of the river, but was rapidly driven out by Gen. J. D. Cox, in a series of skirmishes, losing at Gauley bridge a large quantity of arms and stores. He now formed a junction with the army of his superior officer Gen. Floyd, under whom he continued to serve in western Virginia until he was ordered in September to report at Richmond. Thence he was sent to Roanoke island, N. C., with instructions to defend it. At the time of the attack upon the island by Gen. Burnside and Commodore Goldsborough, Feb. 7, he was sick at Nag's Head, on the mainland, opposite the N. E. part of the island; but the greater part of his brigade, known as the Wise legion, took part in the action, and his son, Capt. O. Jennings Wise, was among the killed. Making his escape after the surrender of the island, Gen. Wise was ordered to report at Manassas, and since that time has taken no prominent part in the war.

WISE, Henry Augustus, an American naval officer and author, born in Brooklyn, N. Y., May 12, 1819. In 1833 he was appointed a midshipman, served on the coast of Florida during the Seminole war, became a lieutenant in 1845, served in the Pacific, in California, and in Mexico during the Mexican war, was flag lieutenant of the Mediterranean squadron from 1852 to 1855, afterward accompanied the Japanese ambassadors on their return home in the frigate Niagara, and in 1862 was promoted to be a commander and made assistant chief of the bureau of ordnance and hydrography. He has written "Los Gringos" (New York, 1849), a volume of brilliant travelling sketches relating to Mexico, California, Peru, Chili, and Polynesia; "Tales for the Marines" (New York, 1855); "Scampavias" (1857); "Captain Brand of the Schooner Centipede," a sea novel published in "Harper's Weekly" illustrated newspaper in 1860, and other works.

WISELIUS, Samuel Iperuszoon, a Dutch poet, born in Amsterdam, Feb. 4, 1769, died there, May 15, 1845. He was educated at Amsterdam, Leyden, and Göttingen, became after the French revolution a member of the provincial government of Holland, and after the downfall of Napoleon was chief of police in Amsterdam. His tragedies and a collection of his other poems were published under the title of *Mengelen Tooneelpoezij* (5 vols., Amsterdam, 1818–'22), and a 6th volume appeared as *Nieuwe Gedichten* (1833).

WISEMAN, Nicholas, an English Roman Catholic clergyman, cardinal archbishop of Westminster, born in Seville, where his father was engaged in business, Aug. 2, 1802. His father's family was of English origin, and his mother's Irish. He was sent to England at the age of 5, and placed at school in Waterford. Two years later he was transferred to St. Cuthbert's college, Ushaw, near Durham, where he remained 8 years, and in 1818 he went to Rome, where he became one of the first members of the then newly restored English college. He was graduated D.D. at the age of 22, ordained in 1825, and appointed professor of oriental languages in the Roman university in 1827, at which time he was also vice-rector of the English college, to the rectorship of which he was subsequently advanced. In 1827 he published his *Horæ Syriacæ*, chiefly drawn from oriental MSS. in the Vatican library. Returning to England in 1835, he soon became celebrated as a preacher and lecturer, and in Lent of the following year delivered at St. Mary's, Moorfields, a course of lectures on the principal doctrines and practices of the Roman Catholic church, which were afterward printed and passed through many editions. His next work was a "Treatise on the Doctrine of the Holy Eucharist." This was followed by his "Lectures on Science and Revealed Religion," designed to reconcile some difficulties between the two which recent scientific researches were supposed to have discovered. In the Lent of 1837 he delivered four lectures in Rome on the office and ceremonies of Holy Week, which were also published. In 1840 he was made bishop, and appointed coadjutor to Dr. Walsh of the midland district. At the same time the presidency of St. Mary's college, Oscott, was assigned to him. After several ecclesiastical changes, he succeeded Dr. Walsh as vicar apostolic of the London district in 1849. On Sept. 29, 1850, the pope issued an apostolic letter restoring the English hierarchy. Dr. Wiseman was appointed archbishop of Westminster, and on the following day was raised to the dignity of a cardinal, taking his title from the ancient church of St. Pudentiana. Violent opposition was shown to this action of the pontiff by the non-Catholics of England, but the excitement has since subsided. Since his elevation to the cardinalate, 3 volumes of his contributions to the "Dublin Review" have been published, under the title of "Essays on Various Subjects." He has also written a tale entitled "Fabiola, or the Church of the Catacombs," which has gained a large circulation in English, and has been translated into other languages. A volume of personal reminiscences entitled "Recollections of the last four Popes, and of Rome in their Times," appeared from his pen in 1858, and in 1859 one embodying his sermons, lectures, and speeches delivered during a tour in Ireland, and his lecture delivered in London on the impressions of his tour. "The Hidden Gem," a play written for St. Cuthbert's college, Ushaw, is his last publication.

WISHART, George, called "the Martyr," a Scottish clergyman and reformer, born about the beginning of the 16th century, probably at Pitarro, where his father is supposed to have been justice clerk to James V., burned at the stake at St. Andrew's, March 28, 1546. In 1538 he left Scotland to avoid persecution, preached at Bristol, England, against the invocation of the Virgin, and, having been condemned therefor, recanted his opinions. In 1543 he was at Cambridge as a tutor in Bennet college, where he led, according to the testimony of one of his pupils, a life of singular abstemiousness, charity, and purity. In July, 1543, he returned to Scotland in company with the commissioners who had been sent to negotiate a marriage treaty between Prince Edward and the infant queen of Scots. Under their protection he preached at Montrose, Dundee, and other Scottish towns, and his preaching led the people to destroy some convents and Roman Catholic churches. He was arrested at Ormiston by the earl of Bothwell and delivered to Cardinal Beaton, who tried him on his own authority before an ecclesiastical court, and sentenced him to be burned. At the stake Wishart predicted with great minuteness the circumstances of the violent and ignominious death of the cardinal, as it took place 3 months after. An attempt has been made to involve Wishart in a plot to assassinate the cardinal, but the evidence is insufficient.

WISHART, George, a Scottish author and divine, born in Haddingtonshire in 1609, died in 1671. He is said to have been educated at the university of Edinburgh, and having entered the church received a charge at St. Andrew's. Refusing to take the covenant, he was deposed from the ministry, and during the supremacy of the Presbyterian party was several times imprisoned. He became chaplain to Montrose, and after that leader's death to Elizabeth, the electress palatine, and on the restoration was made rector of Newcastle. He was consecrated bishop of Edinburgh in 1662. He is chiefly known by his "History of the Wars of Montrose" (1647), written in elegant Latin, and translated into English in 1652, probably by Wishart himself. When Montrose was executed in 1650, a copy of this work was hung in contumely about his neck.

WISHTONWISH. See Prairie Dog.

WISMAR, a fortified seaport of the grand duchy of Mecklenburg-Schwerin, capital of the seigniory of Wismar, situated at the head of a small bay of the Baltic, which forms one of the best harbors on that sea, and at the terminus of a branch railway of the Hamburg and Rostock line, 18 m. from Schwerin; pop. in 1860, 12,875. It has a handsome city hall, 6 churches, a gymnasium, an orphan asylum, 3 hospitals, several other charitable institutions, and a theatre. Its principal manufactures are leather, machines, playing cards, brass ware, looking glasses, clocks, tobacco, and sail cloth. Its commerce, which is mainly conducted with Sweden, is considerable, employing over 50 vessels owned in the city. The chief articles of export are wheat, butter, and cattle.—Wismar was founded in 1229, and was formerly the capital of Mecklenburg-Schwerin, and one of the strongest of the Hanseatic cities. By the treaty of Westphalia it was given to Sweden, which established there a court of appeals for its possessions in Germany. It was restored to Mecklenburg in 1803.

WISTAR, Caspar, an American physician, born in Philadelphia, Sept. 13, 1761, died Jan.

22, 1818. He was educated at the grammar school established by William Penn in his native city, subsequently attended the Philadelphia medical school, in 1783 went to pursue his studies in Europe, and was graduated at Edinburgh in 1786. He travelled on foot over the greater part of England and Scotland, and returned to Philadelphia in Feb. 1787. When the college of that city was revived, he was appointed professor of chemistry and physiology. He was for a time adjunct professor with Dr. William Shippen of anatomy and surgery, and upon Dr. Shippen's death was appointed to that chair. From 1815 till his death he was president of the American philosophical society. He published "A System of Anatomy" (2 vols. 8vo., Philadelphia, 1812).

WISZNIEWSKI, Michal, a Polish author, born at Firlejow, Galicia, in 1794, was educated at Lemberg, Krzemeniec, and the university of Edinburgh. From 1818 to 1822 he was travelling in France and Italy. He then became professor of philology at Krzemeniec, but was obliged for the sake of his health to spend several years in Italy and southern France. In 1830 he became professor of history and of the history of literature at the university of Cracow, which office he still holds. During the Polish insurrection of 1846 he made himself conspicuous as a violent opponent of the dictator John Tyssowski. His principal work is *Historya literatury polskiéj* (Cracow, vols. i.—ix., 1840-'60), bringing his subject down to 1650, and he is still engaged upon the sequel. His *Bakona metoda tlumaczenia natury* ("Bacon's Method of Interpreting Nature") is an interesting philosophical treatise. His *Charaktery rozumów ludzkich* (2d ed., Cracow, 1840) was originally written in English under the title of "Sketches and Characters, or the Natural History of the Human Intellect."

WITCH, a person supposed to have formed a compact with evil spirits, and by their means to possess supernatural power. The subject of witchcraft has been treated generally in the articles Demon and Magic, and in this article a more particular account of the Salem witchcraft will be given. The first settlers brought a belief in witches with them from Europe, and 6 or 8 witches had been executed between 1648 and 1655. In 1688 the children of John Goodwin, a citizen of Boston, were believed to be bewitched; and after some investigation of the cases by the Rev. Cotton Mather, they accused an old half-witted Irish woman of bewitching them, and she was hanged. In 1692 3 children of the Rev. Mr. Parris, a minister of Danvers (then a part of Salem), complained of being tortured by a witch, and accused an Indian woman named Tituba, who had tried to relieve them by some of her Indian incantations, of being the witch. Tituba was imprisoned, and soon they accused two other friendless old women, one crazy and the other bedridden, of being also witches. The excitement spread, and soon others, adults as well as children, complained of being bewitched, and accused those against whom they had any pique. Cotton Mather, Judge Stoughton, the Rev. Mr. Noyes of Salem, and Increase Mather, the president of Harvard college, as well as many others, encouraged arrests, and proclaimed that this was an effort of the devil to gain the victory over the saints. The result was that in one year 20 had been executed, 19 by hanging and one by being pressed to death, and among these were a clergyman and several of the most reputable citizens of Massachusetts; 8 were condemned, 150 in prison awaiting trial, and 200 more accused, while a considerable number of the suspected had fled the country. A reaction took place, which led, in connection with King William's veto of the witchcraft act, to the pardoning of those that were condemned and the discharge of those arrested. Some of the judges and ministers afterward acknowledged that they had been deluded, and made what reparation they could. Others, like Mather and Stoughton, clung to their belief and justified the executions. There were a few who in the height of the excitement, at imminent peril of their lives, resisted the demand for the execution of the alleged witches; among these were the Rev. Samuel Willard, the Rev. Mr. Moody, ex-Governor Bradstreet, Thomas Danforth, and especially Robert Calef, a merchant of Boston. —See Upham's "Lectures on the Salem Witchcraft" (Boston, 1831).

WITCH HAZEL (*hamamelis Virginica*, Linn.), a shrub 6 to 20 feet high, the stem seldom erect, covered with a brownish ash-colored, rather smooth bark, that of the branchlets of a lighter brown with orange dots, the branches long and pliant, curving upward; the leaves lateral and alternate or collected in tufts at the ends of the branches, short-petioled, irregularly obovate or rhomboidal, inequilateral, many-toothed, veined, pubescent when young. As the foliage ripens and changes in the autumn to a brownish yellow, the twigs become covered with multitudes of golden flowers, each with a calyx divided into 4 segments, which are rusty and downy without and yellow within, ovate, rounded, and ciliate; 4 petals, long, linear, crumpled, with 4 short, incurved, yellow scales at their base; the stamens 4, alternating with the scales and curving inward; the ovary downy, ovate, terminating in 2 short slender styles; the fruit a double nut enclosed in the swollen 4-parted calyx, ripening in the second year. In mild seasons the flowers may be seen as late as October and November, and their profusion contributes to the pleasantness of the season. A shrub of such striking appearance is worthy of cultivation, the more so as it can be propagated from its seeds, which should be sown as soon as they ripen; and the transplanted shrubs would readily grow in moist soil. The species is widely diffused throughout the United States. A variety with smaller leaves and stinted habit of growth, and another with large foliage, reputed to be distinct species, are mentioned by Loudon; while a few other species appear in China and Persia.—The witch hazels belong to the natural order *hamamelidaceæ* of Lindley, consisting of several genera indigenous to North America, Japan, China, central Asia, Madagascar, and S. Africa. Some are large and valuable timber trees, and others are useful in various ways. The leaves and twigs of the common witch hazel are astringent, and its bark likewise contains a peculiar acrid essential oil. Its crooked branches were once in great repute for divining rods. Several medicinal qualities are attributed to it among the Indian tribes, the bark being used by them as sedative in local inflammations. The kernels of the nuts are oily and edible.

WITENAGEMOTE. See ENGLAND, vol. vii. p. 174.

WITHER, GEORGE, an English poet, born in Bentworth, Hampshire, June 11, 1588, died in London, May 2, 1667. He was educated at Magdalen college, Oxford, but left the university without taking a degree, and for a time devoted himself to agricultural pursuits. In 1613 he entered himself at one of the inns of chancery, and in the same year published his satire entitled "Abuses Stript and Whipt," for which he was thrown into the Marshalsea prison. He beguiled the tedium of his captivity by composing his fine poem, "The Shepherd's Hunting," and his "Satire to the King," which, it is said, procured his release from captivity. He thenceforth became an active denouncer in prose and verse of the abuses of the times, and in some wise the mouthpiece of the puritanical party, who greatly relished what Wood calls his "profuse pouring forth of English rhyme." In 1639 he served as captain of horse in the expedition conducted by Charles I. against the Scottish Covenanters, and in the subsequent civil war raised a troop of horse from the proceeds of his estate, and joined the parliamentary forces. Having been taken prisoner, he was in danger of being hanged, had not Sir John Denham begged that his life might be spared, protesting that as long as Wither lived he (Denham) would not be accounted the worst poet in England. After his release he was appointed by Cromwell one of his major-generals, and kept watch over the royalists of Surrey, from whose sequestered estates he obtained a considerable fortune. Of this he was stripped at the restoration, notwithstanding his indignant protest; and he was soon after confined by order of the convention parliament in Newgate on the charge of publishing a seditious and libellous pamphlet entitled *Vox Vulgi*. The exact duration of his imprisonment is not known, but he was certainly released several years before his death. He had long been in disrepute when Ellis, Campbell, Hazlitt, and other literary critics revived his claims to notice in their selections from the early British poets. Sir Egerton Brydges especially devoted considerable portions of the *Restituta*, *Censura Litteraria*, and "British Bibliographer" to the republication of entire works by Wither. His writings were very numerous, and no considerable collection of them has ever been made. The list of them in Bliss's edition of Wood's *Fasti Oxonienses* fills 13 columns. The late John Matthew Gutch of Bristol reprinted about 1820 some of the best of his poems in 3 stout 12mo. volumes, and the "Library of Old Authors" of John Russell Smith includes (London, 1856) his "Hymns and Songs of the Church," originally published in 1623, and (London, 1857) his "Hallelujah, or Britain's Second Remembrancer," originally published in 1641. The contemptuous judgment of the earlier critics upon him is now set aside, and it is admitted that, along with much that is dull and prosaic, he wrote some of the most beautiful poems in English literature.

WITHERITE. See BARYTA.

WITHERSPOON, JOHN, D.D., LL.D., president of Princeton college, and one of the signers of the declaration of independence, born in the parish of Yester (of which his father was minister), Haddingtonshire, Scotland, Feb. 5, 1722, died near Princeton, N. J., Sept. 15, 1794. He was a lineal descendant on the mother's side of John Knox, was educated at the university of Edinburgh, was licensed to preach in his 21st year, and in 1745 was ordained minister of the parish of Beith in the west of Scotland. He was present as a spectator at the battle of Falkirk, Jan. 17, 1746, and was taken prisoner, but released after two weeks' confinement, during which his health received a permanent injury. In 1753 he published anonymously "Ecclesiastical Characteristics, or the Arcana of Church Policy," followed a few years later by "A Serious Apology for the Characteristics," in which he avowed himself the author of the work he defended. In 1756 he published his "Essay on Justification," and the following year his "Serious Inquiry into the Nature and Effects of the Stage," called forth by the appearance of Home's tragedy of "Douglas." In 1757 he was installed as pastor of the Low church in Paisley, after some opposition from the presbytery of that town, on account of their dislike of the "Characteristics." In 1764 he went to London, and published 3 volumes of "Essays on Important Subjects." Shortly after the death of President Finley in 1766, the college of New Jersey chose Dr. Witherspoon to be his successor. He at first declined the appointment, but afterward accepted, and was inaugurated in Aug. 1768. He greatly raised the reputation of the institution, and obtained a considerable increase of its funds by subscriptions. He accepted the professorship of divinity in addition to his other duties, and was pastor of the church in Princeton during the whole period of his presidency. On May 17, 1776, the day appointed by congress to be observed as a fast with reference to the peculiar circumstances of the country, he preached a sermon entitled "The Dominion of Providence over the Passions of Men," which entered fully into the great political questions of the day. In the same year he was a member of the provincial congress of New Jersey, and of the continental congress at Philadelphia. He represented New Jersey in congress for 6 years, and drew up many of the important state papers of that period. In far-reaching insight into the future it may safely be said that he had not his superior in that body. After the war, the college having suffered greatly, Dr. Witherspoon was sent to England by the trustees to solicit donations. He not only utterly failed of his object, but found himself placed in circumstances of painful embarrassment. During the latter part of his life he suffered not a little in consequence of having ventured upon some imprudent speculations in Vermont lands. He spent his last years on his farm about two miles from Princeton. For some time previous to his death he was totally blind. Editions of his entire works have been published in Philadelphia and Edinburgh, the former in 3 vols. 8vo., the latter in 9 vols. 12mo.

WITNESS. See EVIDENCE.

WITT, JAN DE. See DE WITT.

WITTE, PETER DE. See CANDIDO.

WITTEKIND, WITIKIND, or WITTICHIND, a chief of the Saxons of Westphalia and Lower Saxony, their principal leader in the war with Charlemagne, 772–803. Charlemagne had successfully invaded the Saxon territory 4 times, and Wittekind had been forced to seek refuge at the court of Denmark, when, taking advantage of the Frankish king's absence in a war with the Moors of Spain (778), he fell upon the country of the Franks and devastated it as far as Deutz, opposite Cologne. On his return Charlemagne drove the Saxons back and ravaged their country as far as the Elbe, where he built fortresses to hold them in check. Being once more called away to Rome, Wittekind seized the opportunity to fall upon the Frankish troops on Mount Suntel, near the Weser, and cut them to pieces. Collecting a large force, Charlemagne now desolated the country far and wide, beheaded 4,500 Saxon prisoners, and drove the whole nation into the fury of despair. The chiefs, Wittekind and Alboin, led the entire fighting strength of the nation against the Franks, and two terrible battles ensued, the one at Detmold being indecisive, and the other on the river Hase in the territory of Osnabrück a victory for Charlemagne, who the next year had so completely subdued the country that Wittekind and Alboin submitted and promised to go to France and be baptized. In 785 Wittekind fulfilled his promise at Attigny, whereupon he was reëstablished in his possessions and created duke of Saxony, and 8 bishoprics were established in Westphalia and Lower Saxony. Some attempts were made at revolt subsequently, but they were promptly checked. Wittekind was killed in a combat with Gewald, duke of Swabia, and was buried in the church of Enger in the county of Ravensberg, where a monument still existing was erected to his memory in 1377 by the emperor Charles IV. The Westphalian society on Oct. 18, 1819, erected a freestone column to him at Minden, which is said to have been the place of his residence.

WITTENBERG, a fortified town of Prussian Saxony, capital of a circle of its own name, in the administrative district of Merseberg, situated on the right bank of the Elbe, which is here crossed by a long bridge, on the railway from Berlin to Leipsic; pop. in 1856, 11,072. It is composed of the old city and two suburbs, and has a Protestant seminary, a college, a medical school, an orphan house, and a hospital. It is a place of considerable strength, having massive walls with 3 gates, a fort, and a strong castle. The principal interest connected with it is due to its being the cradle of the reformation. In its Augustinian monastery, now a ruin, Luther had his apartments; in its university he was a professor; and on the door of one of its parish churches he nailed his celebrated theses, which was the first public step toward the reformation. In its *Stadtkirche* Luther and Melanchthon preached, and Cranach, their friend, executed that remarkable altarpiece in which the real portraits of the reformers are introduced; in the *Schlosskirche* both Luther and Melanchthon were buried, as well as their friends the electors Frederic and John. In one of the narrow streets still stand the houses of Melanchthon and Cranach; in the market place is the iron statue of Luther by Schadow, and in the town hall are portraits of him and Melanchthon. Outside the Elster gate, a little place, railed in, is pointed out as the spot where in 1520 Luther burned the pope's bull of excommunication.—Wittenberg was founded by Bernard, son of Albert the Bear, duke of Brandenburg, and previous to 1422 was the residence of the dukes and electors of Saxony. In 1547, after the battle of Mühlberg, it was taken by Charles V. In 1760 it was bombarded by the Austrians, and one third of its houses destroyed. It was restored by the Prussians, and in 1806 it was taken by Napoleon, who rebuilt its fortifications in 1813. In 1814 it was besieged and taken by the Prussians. Its university, founded in 1502, was transferred to Halle in 1815.

WLADIMIR. See VLADIMIR.

WOAD (*isatis tinctoria*), a plant which, until the introduction of indigo, was the principal source from which a blue dye was obtained. It is an herbaceous biennial plant, of the order *cruciferæ*, with yellow flowers, large flattened seed vessels, and large smooth leaves. The leaves, which are the only part employed in dyeing, do not appear to contain the blue coloring matter ready formed, but require to be subjected to a process of fermentation in order to produce it. The seed is sown in winter or early spring, and when the leaves are 4 or 5 inches long they are cut, successive crops being obtained at intervals of 5 or 6 weeks throughout the season. Only those plants required for seed are kept until a second year, as the leaves are then of much less value. The leaves when gathered are slightly dried, and ground in a mill into a paste. In Germany this paste, after remaining in a heap for 24 hours, was formed into balls, which by drying in the sun, and afterward in heaps under cover, shrunk and became hard, and were generally sold in this state. To fit them for use, they were broken with wooden hammers, heaped on a floor, sprinkled with water, and allowed to ferment. Much heat was produced, and the mass required to be frequently turned over with shovels and sprinkled with water. When the heat had subsided, the dry mass was pounded and sifted, and was then ready for use. In France, the paste was placed in a heap at the upper end of a sloping pavement, and allowed to ferment for 20 or 30 days. It swelled up and formed cracks, which were immediately closed, while a black juice drained away from it. When tolerably dry, it was again ground and formed into cakes, which after thorough drying were sent into the market. The name of pastel is given to the prepared woad. It is now nowhere employed alone, since indigo is found more economical; but in dyeing woollen it is still used for the purpose of producing fermentation in the indigo vat, which it effects better than any substitute that has been tried. Its cultivation, which was formerly a source of great wealth to many districts of Europe, especially Thuringia, Languedoc, and Piedmont, has consequently very much declined, and in many districts become entirely extinct. The coloring matter of woad is identical with that of indigo, but is contained in it in too small a proportion (about $\frac{1}{5}$ of 1 per cent. of the weight of the fresh leaves) to be profitably extracted. Woad was also formerly employed in medicine as a remedy in scorbutic affections, jaundice, &c., but does not appear to be used at present. The industrial importance of the cultivation of woad was formerly so great, that it was protected by stringent laws long after the introduction of indigo. (See INDIGO.)

WODIN. See ODIN.

WODROW, ROBERT, a Scottish historian, born in Glasgow in 1679, died March 21, 1734. He was educated at the university of Glasgow, studied theology under his father, the Rev. James Wodrow, who was a professor in that institution, and in 1698 became university librarian. In 1703 he was ordained minister of the parish of Eastwood. The work by which he is best known, his "History of the Sufferings of the Church of Scotland from the Restoration to the Revolution" (2 vols. fol., Edinburgh, 1721–'2), was the fruit of 14 years' labor. He also wrote a life of his father, which was published in 1828, and a series of memoirs of eminent ministers of the church of Scotland, a selection from which was printed for the Maitland club in 1834. He left a large collection of MSS. chiefly relating to Scottish ecclesiastical affairs, parts of which have been printed by the Wodrow society established in 1841.

WOFFINGTON, MARGARET, an Irish actress, born in Dublin in 1719, died March 28, 1760. She was of poor parentage, and commenced her theatrical career about the age of 9, as one of a company of children who performed in a show booth. A few years afterward she appeared in Dublin in company with a libertine whose mistress she had become, and obtained an engagement at one of the principal theatres, where she played Sir Harry Wildair and other parts with great success. In 1740 she made her first appearance in London at Covent Garden, where, except for a short time during which she was again engaged in Dublin, she continued to perform until her retirement from the stage in 1759. She was remarkably beautiful in person, and gifted with a variety of accomplishments which gave her a ready admission to the society of persons of rank and talents. Her early life was exceedingly loose, but at a later period she reformed, became simple in her tastes and habits, devout, and respectable. As a comic actress she has rarely been excelled either in the variety of her powers or the truth of her personations.

WÖHLER, FRIEDRICH, a German chemist, born in Eschersheim, near Frankfort, July 31, 1800. He was educated at the gymnasium of Frankfort and the universities of Marburg and Heidelberg, where he devoted himself to physics, medicine, mineralogy, and especially chemistry, and was graduated as M.D. in 1823. He then went to Stockholm, and spent nearly a year in chemical investigations in the laboratory of Berzelius. In 1824 he made a mineralogical excursion through Sweden and Norway with Berzelius and the brothers Brongniart, on which occasion he also made the acquaintance of Sir Humphry Davy and Oersted. In 1825, on the recommendation of Leopold von Buch, he was appointed teacher of chemistry and mineralogy in the *Gewerbschule* at Berlin, and in 1828 became professor there. During this time he became intimate with Liebig, with whom he has ever since maintained very close professional and personal relations. He resigned his professorship in 1832 and went to Cassel, where he discovered a method for the extraction of nickel, and set up a manufactory of that metal. At the same time he became professor of chemistry and technology in the *Gewerbschule* there. In 1836 he removed to Göttingen as professor of medicine, director of the chemical institute, and general inspector of Hanoverian apothecaries, which offices he still holds. His numerous and most important investigations and discoveries have been published chiefly in periodicals, especially in Liebig's *Annalen der Chemie und Pharmacie*, in the publication of which he became associated in 1838. He was the first to eliminate the metal aluminum, which he did in 1827, and has been equally successful in producing other metals previously unknown, as glucinum and yttrium. He has published *Grundriss der unorganischen Chemie* (12th ed., Berlin, 1860) and *Grundriss der* *organischen Chemie* (5th ed., Berlin, 1854), two small manuals of great repute.

WOIWODE. See Waywode.

WOLCOTT, John, an English physician and satirist, better known as Peter Pindar, born at Dodbroke, Devonshire, in 1738, died Feb. 14, 1819. He was educated for the medical profession by his uncle, a physician at Fowey in Cornwall, and in 1767 went out to Jamaica as medical attendant to Sir William Trelawney, the governor. Though an avowed unbeliever, he obtained from his patron the promise of a living, and returned to England to be ordained. The living did not fall vacant as he expected, and he was forced to content himself with a small curacy in Jamaica, the duties of which he performed in a not very edifying manner until the governor's death in 1768. He then tried his fortune again as a physician in England, and settled at Truro, but was not long in finding a pleasanter road to success by the exercise of his pen. He removed to London, ridiculed the royal academy in his "Lyric Odes," and became a professed satirist. His verses brought him reputation and a good income, until the government bought his silence by a pension, but are now little read. "An Epistle to the Reviewers," "Peeps at St. James's," "Royal Visits," and "The Lousiad," which owes its origin to the discovery of a certain insect among some peas on the king's plate, are among the best known of his writings. A collection of about 60 of his poetical pieces appeared in 4 vols. in 1796.

WOLCOTT, Oliver, an American statesman and general, and a signer of the declaration of independence, born in Connecticut, Nov. 26, 1726, died Dec. 1, 1797. He was graduated at Yale college at the age of 21, and in the same year received a captain's commission from the governor of New York, and raised a company for the defence of the northern frontier, where he remained until the peace of Aix la Chapelle. Upon his return he began to study medicine, but in 1751 was appointed sheriff of Litchfield co., Conn., and in 1774 a member of the state council. He was also chief judge of the court of common pleas, a judge of the probate court, and a major-general of militia. In 1775 he was appointed by the continental congress one of the commissioners of Indian affairs for the northern department, whose duty it was to secure the neutrality of the Indians. In 1776 he commanded the 14 Connecticut regiments raised to act with the army in New York, and in the same year he took his seat in congress. After the declaration was signed he returned to the army, and was present at the battle of Saratoga, but continued to serve in congress at intervals till 1783. He was lieutenant-governor of Connecticut from 1786 to 1796, when he was elected governor, which office he held at the time of his death.

WOLCOTT, Roger, a colonial governor of Connecticut, father of the preceding, born at Windsor, Conn., Jan. 4, 1679, died in that part of the same town which is now East Windsor, May 17, 1767. At the age of 12 years he was apprenticed to a mechanic, and in 1700 purchased a tract of land on the E. side of the Connecticut, in his native town, where he resided for the remainder of his life. In 1711 he was appointed commissary of the Connecticut colonial forces in the attack on Canada, and in the subsequent French wars was successively promoted till he attained the rank of major-general at the siege of Louisburg in 1745. In 1751 he was elected governor of the colony, and reëlected for the next three years. He had previously been repeatedly member of the assembly and of the council, judge of the county court and of the superior court, and deputy governor. He published in 1725 a volume of "Poetical Meditations, being the Improvement of some Vacant Hours;" and he wrote a poem of 1,500 lines entitled "A Brief Account of the Agency of the Honorable John Winthrop, Esq., in the Court of King Charles II., A. D. 1662," in which he gives a description of the Pequot war. The latter was not published during the author's life, but has been printed in the collections of the Massachusetts historical society, and the original is among the manuscripts of the Connecticut historical society.

WOLF (*canis lupus*, Linn.), the typical form of the *canina* or dogs, whose family characters have been described under Dog. The European wolf is about 4 feet long, with a tail of 16 inches, and is commonly yellowish gray above and dirty yellowish white below; it is about the size of a large dog, but leaner and more gaunt in appearance, and with a wicked expression of countenance from the obliquity of the eyes; the pupils are round, the ears erect, and the tail carried nearly straight and hanging down. It is a cowardly but powerful animal, hunting deer and animals of that size in packs, often committing great ravages among sheep, calves, and the smaller domestic animals, but rarely attacking man unless rendered fearless by hunger; it is very cautious and difficult to entrap, except when food is very scarce. It was formerly common over most of Europe, but is now so only in the most unfrequented and mountainous regions of N. Europe and Asia. The Anglo-Saxon name for January, wolf month, shows that this animal was once probably abundant in Great Britain, and especially bold and destructive in that month. Its osteological and anatomical characters are almost identical with those of the dog, and the period of gestation the same; so that it is extremely probable, for these and other reasons stated under Dog, that some of the partly domesticated races of this animal have been derived from, and are specifically identical with, the wolf; it is not so intractable as is generally supposed, and it exhibits much of the sagacity of the dog; when taken young it has even been so tamed as to show unmistakable signs of affection for man and for its companions in captivity. A species of wolf is represented with the dog on

Egyptian monuments, and is figured on tombs of the 4th dynasty, 4,000 years ago. It becomes almost white in Sweden and Siberia.—In North America there are two well marked sections of wolves; in the smaller, to which the prairie wolf belongs, the skull is slender and the muzzle elongated and fox-like, with not very prominent cranial crests; in the other, containing the large wolf, the skull is higher, with larger crests, broader muzzle, and relatively smaller orbits. Some rank the South American fox-like *canina* among the wolves, comprising the genera *lycalopex* and *pseudalopex* of Burmeister. The North American or common gray wolf (*C. occidentalis*, Rich.) is usually grayish above, with a mixture of black points giving a grizzled appearance, and lighter or yellowish gray below; it varies from this to nearly white, and is hence called *C. variabilis* by Prince Maximilian; it is from 3¾ to 4¼ feet long, with a tail of 17 to 20 inches. It is stouter than the European wolf, with wider muzzle, larger head, more arched forehead, shorter ears and legs, longer and finer hair, and more bushy tail; many authors consider it a permanent variety of the European species, while others not only regard it as distinct, but make several species of it. Among the varieties which have received names, are the white wolf on the upper waters of the Missouri, the dusky in the northwestern states, the black in the south, and the rufous in Texas; these vary also in shape, being more slender and longer-legged at the south. The giant wolf described by Townsend, from Oregon, was probably only a very large specimen of the common gray species. It was formerly abundant all over North America, and many is the tale of frontier life in which its hungry and destructive bands have figured; in the far west they follow the trail of the buffalo herds, picking up the sick and straggling or feeding on the refuse of the hunters; they also run down deer in packs, and occasionally attack and devour horses, and man himself, when furious with hunger. In the middle and New England states a few still linger in the mountainous and wooded districts, especially where there are deer, on which they principally feed; in some districts, remote from civilization, it was formerly impossible to keep sheep on account of the depredations of the wolves; bounties of $10 to $20 a head were offered in most thinly settled regions, paid partly by the state and partly by the county or town. The wolf has 4 to 9 young at a time in the spring, which it protects in burrows; it crosses with domestic dogs, and the Indians try to improve their sledge dogs in this way; it can hardly be distinguished from these dogs, except by the superior size and strength; the howl is so like that of the dog, as sometimes to deceive even the Indian's practised ear.—The prairie wolf (*C. latrans*, Say), or the coyote of the Mexicans, is intermediate in size between the fox and the wolf, having the sharp muzzle of the former and the shape and tail of the latter; it is the American representative of the old world jackal. It is 36 to 40 inches long, with a tail of 16 to 18; the color is usually dull yellowish gray on the back and sides, with black cloudings; under parts and inside of limbs dirty white; the ears very large, triangular, erect, and mostly coated with hair; there are 4 toes on each foot, and on the fore feet a sharp claw on the inside, 2 inches above the sole, attached to the rudimentary thumb; tail bushy but tapering, and the hair coarse. The voice is a kind of snapping bark, whence the name of barking wolf. It is found on the vast plains of the Missouri and the Saskatchewan, extending from Mexico to lat. 55° N.; it lives and breeds in burrows, having the young, sometimes 10, in April; it hunts in packs, and is very fleet.

WOLF, Ferdinand, a German writer on Spanish literature, born in Vienna, Dec. 8, 1796, studied at the universities of Vienna and Gratz, and was destined for the profession of the law, but, in order to devote himself to his favorite studies, became attached to the imperial library at Vienna, of which for many years he has been the librarian. He has published many works on subjects connected with Spanish literary history, and furnished many notes and corrections to the German version of Ticknor's "History of Spanish Literature" (Leipsic, 1852). His latest work is *Studien zur Geschichte der spanischen und portugiesischen Literatur* (Berlin, 1859). He has also written upon Provençal and early French literature.

WOLF, Friedrich August, a German classical scholar, born at Hainrode, near Nordhausen, Feb. 15, 1759, died in Marseilles, Aug. 8, 1824. In his 7th year he entered the gymnasium of Nordhausen, and at the age of 18 went to the university of Göttingen to study philology exclusively, previous to which he had read all the more important authors in the ancient languages, as well as in German, French, English, Italian, and Spanish. During his residence at Göttingen he gave instruction in Greek and also in English, for which latter purpose he published an edition of Shakespeare's "Macbeth," with explanatory notes (Göttingen, 1778). He left Göttingen in 1779, and was immediately afterward appointed teacher in the *Pædagogium* at Ilfeld, where he translated Plato's "Banquet" into German with a commentary. In 1782 he became rector of the public school at Osterode, at the foot of the Hartz mountains. In 1783 he was appointed professor of philosophy and pedagogy in the university of Halle, where he lectured 23 years, refusing in 1796 a call to a professorship in Leyden, another in 1798 to Copenhagen, and another in 1805 to Munich. When the university of Halle was closed in 1806, Wolf, reduced for a time to great poverty, went to Berlin, and took an active part in the establishment of the university there, and received also an office in the ministry of public instruction, which he retained but for a short time. At the time of his death he was travelling for the benefit of his health. His most celebrated work is his *Prolegomena ad Homerum* (1795), in which is advanced the idea that the Iliad and Odyssey in their present form are not the work of Homer, but were put together from the fragments of various rhapsodists. He was one of the greatest of the great scholars of Germany. He published editions of several classic authors, including Hesiod, Demosthenes, Cicero, and Plato, and from 1817 to 1820 edited at Berlin a philological periodical, the *Literarische Analekten.*

WOLF, Johann Christian von, a German philosopher and mathematician, born in Breslau, Jan. 24, 1679, died April 9, 1754. Intended for the church, and remarking early the sterility of polemical discussions, he devoted himself to mathematics *methodi gratia*, for the purpose of giving to theology an indisputable certitude. He studied mathematics, physics, and the Cartesian philosophy at Jena and Leipsic, annotated the *Medicina Mentis* of Tschirnhausen, maintained a thesis at Leipsic in 1703 *De Philosophia Practica Universali*, *Methodo Mathematica Conscripta*, delivered lectures there which were fully attended, and published mathematical tracts which gave him reputation among learned men. He became acquainted with Leibnitz, by whose encouragement he abandoned theology for philosophy, and was chosen in 1707 professor of pure and applied mathematics at Halle. He was admitted into the philosophical society of Leipsic, and in 1710 into the royal society of London, and published in the German language treatises on the powers of the human mind (1712), the Deity and the universe, the operations of nature, and the search after happiness (1719). Becoming obnoxious to the theologians of Halle, who regarded his opinions on the doctrine of necessity and his approbation of the moral precepts of Confucius as inimical to the Christian religion, he was deprived of his chair by a cabinet order on Nov. 15, 1723, and commanded to leave Prussia within two days. He was received with favor in Cassel, and became professor in Marburg, where he resided 18 years, and published his most important philosophical works. His dismission was the occasion of a violent controversy on liberty and necessity in most of the German universities. He was invited back to Halle in 1733, but did not return till 1741, after the accession of Frederic the Great. He was triumphantly welcomed, became privy councillor and professor of law, was made chancellor of the university in 1743, and baron of the empire in 1745, but was less successful than formerly as a lecturer.—The mass of his writings is prodigious. His philosophical works in German, under the general title of *Vernünftige Gedanken*, form 7 volumes (1712–'33), and his longer works in Latin 22 volumes (1728–'50). The titles of his systematic philosophical treatises are: *Philosophia Rationalis* (1728); *Psychologia Empirica* (1728); *Philosophia Prima, sive Ontologia* (1730); *Cosmologia Generalis* (1731); *Philosophia Moralis* (1732); *Psychologia Rationalis* (1734); *Theologia Naturalis* (1737); and *Philosophia Practica Universalis* (1738–'9). He systematized and completed the philosophy of Leibnitz, bringing the whole domain of knowledge within its scope. Defining philosophy as a science of the possible, he divides it into two parts, metaphysical and practical, corresponding to the two faculties of knowing and willing. The former embraces ontology, cosmology, psychology, and natural theology; the latter, ethics, economics, and politics. The principles of contradiction and of the sufficient reason, the doctrines of monads, called by him simple beings, of optimism, of the preestablished harmony, of perception and apperception, the cosmological proof of the existence of God, and the maintenance of self-perfection as the supreme moral law, are the most prominent features of his system. Philosophical language is indebted to him for the introduction of many terms and precise definitions. Developed with admirable completeness and order, his philosophy prevailed in Germany until the time of Kant. His principal mathematical works are included in his *Elementa Matheseos Universæ* (5 vols. 4to., Geneva, 1732–'41). The most recent authority on the events of his life is *Christian Wolf's Eigene Lebenbeschreibung*, published by Wuttke (Leipsic, 1841).

WOLF, Johann Christoph, a German scholar and divine, born at Wernigerode, Feb. 21, 1683, died July 25, 1739. He was educated at the university of Wittenberg, and in 1706 began to lecture there on philosophical subjects. He travelled through Holland and England in 1708, and upon his return became extraordinary professor in the philosophical faculty at Wittenberg. A few years afterward he was made professor of oriental languages at the gymnasium of Hamburg, subsequently rector of the same institution, and in 1716 pastor in the church of St. Catharine. His principal works are a *Historia Lexicorum Hebraicorum* (Wittenberg, 1705), and a *Bibliotheca Hebraica* (4 vols. 4to., Hamburg, 1715–'33).

WOLF FISH (*anarrhichas lupus*, Linn.), a spiny-rayed fish allied to the blenny family, and inhabiting the seas of northern Europe and America. It attains a size of 3 to 5 feet, and it is said larger; the color is purplish brown above, with 10 to 12 transverse black or brown stripes extending more or less over the whitish lower parts; the dorsal fin extends from behind the head almost to the caudal, and the anal is half as long, bringing the vent very far forward; the pectorals are very large, the caudal rounded, and the ventrals absent; the body is compressed, with small scales covered by a slimy skin; head cat-like and rounded in front; the stomach is short and fleshy, the diameter of the intestines uncommonly large, the gall bladder enormous, the brain very small, and the air bladder absent. The teeth differ from those in all other fishes, not being attached directly to the jaws, but to bony processes connected with them by suture, and are therefore easily broken off; they are strong, conical, and like canines in front, and rounded tubercles posteriorly and on the vomer and palate; the tongue is thick and angular, adapted for directing the food between the powerful jaws; the lips are loose and fleshy. Few fishes have so savage an appearance, and few fight so fiercely when caught, biting at every thing which comes in their way; from their ability to inflict severe wounds, they are knocked on the head at once by the fishermen, and they live a long time out of water. The shape of the head, large mouth, and formidable teeth indicate the ferocity of their disposition and very predaceous habits; their food consists of crustaceans, mollusks, and echinoderms, whose shells are easily crushed, and which are voided almost unchanged; they swim rapidly along the bottom, with an undulating motion, and are very active and destructive to nets. This species is found from the English channel northward, being very abundant about Iceland; its flesh is said to be exceedingly good, much like that of the eel, and is highly esteemed in Iceland, where it is used fresh and salted; the skin is converted into a kind of shagreen used for bags and pouches, and the bile is employed as soap. The generic name is derived from the unfounded supposition that it climbs rocks by its fins and tail. The American species, found from New York to Greenland, has been considered distinct by Agassiz, and named by him *A. vomerinus*, from the different number and disposition of the teeth on the vomer. It grows from 3 to 5 feet long, with a weight of 5 to 30 lbs.; it is caught all the year round by the cod fishers, but mostly in the winter, and especially on the cusk rocks between Boston and Cape Ann; the fishermen generally call it "sea cat." Though its hideous appearance and slimy skin lead to its being in many instances thrown away, specimens from 5 to 10 lbs. are very fine eating, especially when broiled after the skin is removed; many are split, salted, and smoked for future use.

WOLFE, Charles, a British clergyman and poet, born in Dublin, Dec. 14, 1791, died in Cork, Feb. 21, 1823. He was graduated at Trinity college, Dublin, in 1814, was a tutor there, took orders in 1817, was a curate at Ballyclog and afterward at Donoughmore, county Tyrone, where his professional labors developed in him a tendency to consumption, and after visiting the south of France in the pursuit of health, he finally died of that disease. His "Remains," consisting of sermons, fragments, and poems, including his famous ode on the burial of Sir John Moore, with a memoir, was published in 1825 by Archdeacon Russell.

WOLFE, James, an English general, born in Westerham, Kent, Jan. 2, 1726, killed in the battle on the heights of Abraham, before Quebec, Sept. 13, 1759. Through the interest of his father, who was colonel of marines in the British army, and eventually attained the rank of lieutenant-general, he was at the age of 15 commissioned a 2d lieutenant in the regiment of marines, was subsequently transferred to a regiment of the line, and within the next 5 years saw much active service, being present at the battles of Dettingen, Fontenoy, Falkirk, and Culloden. At the battle of Lafeldt, fought in 1747, he received high encomiums from his commander-in-chief for gallant conduct at a critical period of the day. During the peace which succeeded the treaty of Aix la Chapelle he confirmed the good impression which his early services had created in the minds of his superior officers by strict attention to the duties of his profession, and the men under his charge were recognized, in discipline, drill, and soldierly appearance, as among the best troops in the British army. The outbreak of the 7 years' war found Wolfe a lieutenant-colonel. In 1757 he was promoted to the colonelcy of the 67th regiment, and appointed quartermaster-general in the ill-managed and fruitless expedition under Sir John Mordaunt against Rochefort, the only creditable movement in which was a night reconnoissance conducted by Wolfe, which penetrated 2 miles into the enemy's country. His recommendation in favor of an immediate attack, and his offer to take the place with 500 men and 3 ships, were unheeded; but Pitt, becoming acquainted with the facts of the case, kept the young officer in view for some future enterprise. This occurred in the following year, when Wolfe was ordered to accompany the expedition under Amherst to Cape Breton, with the rank of brigadier-general. In all the operations before Louisburg, where he commanded a division of the British army, he bore a distinguished part, and after the reduction of the place he returned at Pitt's desire to England. The minister was then planning the overthrow of the French dominion in North America by the capture of their chief stronghold, Quebec, and with the instinct of genius he singled out Gen. Wolfe, as the most promising young officer in the army, to command the expedition, notwithstanding many older officers might by virtue of seniority have claimed the honor. Wolfe was accordingly created a major-general, and in the latter part of June, 1759, arrived before Quebec with a force of 8,000 men, supported by a powerful fleet under Admiral Saunders. To meet the attack, the French commander-in-chief, the marquis de Montcalm, had concentrated all his available troops in and about the city, which, in addition to its almost impregnable defences, was further fortified by new and skilfully constructed works on the line called Beauport, extending along the left bank of the St. Lawrence as far as the Montmorency. Wolfe, having erected batteries at Point Levi and the isle of Orleans, opened fire upon the city, but succeeded in inflicting little real damage, the large ships of war from their great draught being unable to coöperate. He next established himself near the mouth of the Montmorency, and made a bold but unsuccessful attack upon the strong

French works at that place, from which he was repulsed with heavy loss. Various minor disasters also sorely tried the temper of the young general, who, at the expiration of two months from his arrival in the St. Lawrence, found himself greatly reduced in men and material, and no nearer apparently to the attainment of his object than before. Various plans proposed by him for storming the city, or wintering in its neighborhood, were rejected by his brigadiers; Amherst, who was to have marched from the south to his assistance, failed to make his appearance; and the most effective part of the fleet was not only unable to coöperate with his army, but would speedily be obliged by the approach of winter to take its departure. A less determined general might have found in these circumstances abundant reasons to abandon the expedition and return home; but Wolfe, with the eye of Pitt upon him, and burning to show the minister that his confidence in him was not misplaced, dared not go back to England unsuccessful, although feeble health and a desire to meet the lady to whom he was betrothed, Miss Lowther, offered powerful inducements to his return. His despatches to Pitt were meanwhile of a desponding character, and from the particularity with which he enumerated the difficulties in his way the public mind in England was agitated with many doubts as to the success of the expedition, and his appointment to the command was severely criticized. But keeping in mind a military order issued to his regiment several years previous, that "while a man is able to do his duty, and can stand and hold his arms, it is infamous to retire," he bore up against physical debility and the misgivings of a naturally desponding nature; and as a last means of drawing Montcalm out of his impregnable position on the Montmorency, he yielded to the advice of his brigadiers, and caused his whole available force, numbering, after leaving garrisons at Point Levi and the isle of Orleans, only 3,600 men, to be conveyed several miles above the city. Montcalm refused to leave his works; but Wolfe immediately applied himself to reconnoitring the north shore of the river, which here rises in a range of nearly precipitous cliffs called the heights of Abraham, crowned by a table land. His quick eye soon detected a cove, less than 2 miles above Quebec, and since called after his name, whence a narrow path wound up the steep; and the daring thought immediately occurred to him to lead his troops up this path to the table land above, and take the city, but slightly protected at this point, by surprise. The day and night of Sept. 12 were employed in preparations, and at 1 o'clock on the morning of the 13th about half the British force were embarked in boats, which, aided by the darkness and the swift current of the river, dropped unobserved and noiselessly down to the landing place. Tradition relates that Wolfe, impressed by the solemnity of the occasion and the scene, repeated in a low voice several stanzas from Gray's "Elegy in a Country Churchyard," and at the close of the recitation exclaimed to the officers in his boat: "Now, gentlemen, I would rather be the author of that poem than take Quebec!" The landing place was reached in safety, Wolfe being among the first to leap on shore, and the British vanguard, led by Colonel (afterward Sir William) Howe, commenced the ascent of the cliffs. In the dense obscurity the path was frequently lost, but the men, inspired by the buoyant courage of their general, clambered up as they best could, staying themselves by overhanging bushes, by the roots or stumps of trees, or by projecting rocks. A French picket guard fled in consternation at this sudden apparition of the enemy, who were thus allowed to complete the ascent unmolested. Fresh detachments followed, including the second embarkation under Gen. Townshend, and at sunrise Wolfe "stood with his invincible battalions on the plains of Abraham, the battle field of empire." Montcalm refused at first to believe that this force was any thing but a small foraging or marauding .party; but becoming convinced of his error, he hurried his troops up from Beauport, expressing entire confidence in his ability to crush the enemy. Soon after 10 o'clock in the morning the two armies confronted each other in about equal numbers, the French having 3 small cannon, and the British but a single piece, which had been dragged up the steep ascent by main force. The British however were veteran troops, trained under the eye of their general, while Montcalm had what Wolfe called but "five weak French battalions" of fewer than 2,000 men, "mingled with disorderly peasantry." The battle commenced with a cannonade lasting about an hour, after which Montcalm, without waiting for the arrival of a body of troops whom he had left in camp, led his men impetuously to the attack. The English received the shock with calmness, and, in obedience to Wolfe's orders, reserved their fire, notwithstanding their comrades were fast dropping around them, and several officers, including Wolfe himself, were wounded, until the French had advanced within 40 yards, when an exact and continuous discharge opened along the whole British line, under the effect of which the raw Canadian levies recoiled in confusion. At this decisive moment Wolfe, pressing to the front, ordered the Louisburg grenadiers to charge the enemy, and while cheering on the men was struck in the groin and in the breast, the last wound proving mortal. He was borne in a dying condition to the rear of the front line, declining the assistance of a surgeon, on the plea that it was "all over with him," and continued to look with glazing eyes upon the field until his sight failed him. Suddenly, as one of the persons standing near him exclaimed: "They run!" he roused himself from his torpor, and asked with great earnestness: "Who run?' Upon being told that the enemy were giving way everywhere, he exclaimed: "Go, one of you, my lads, to Col. Barton; tell him to march Webb's regiment with all speed down to Charles river, to cut off the retreat of the fugitives from the bridge." Then turning on his side, he said: "Now God be praised, I will die in peace," and immediately expired, having gained one of the most decisive victories in history, and "crowded into a few hours," says Bancroft, "actions that would give lustre to length of life." Five days later Quebec surrendered, and Canada was lost to France. In England the public exultation over the victory was mingled with a sincere expression of sorrow at the death of Wolfe, and the whole nation went into mourning for him. "Joy, grief, curiosity, astonishment," says Horace Walpole, "were painted in every countenance." His remains were carried to England and interred in the parish church at Greenwich, and parliament unanimously voted a monument to him in Westminster abbey. The assembly of Massachusetts also voted a marble statue of him. A small column marks the spot where he received his death wound, and in the government gardens at Quebec there stands an obelisk 60 feet in height erected in honor of himself and of his gallant enemy, Montcalm, who died from wounds received in the same battle. His life has never yet been written, although ample materials for one, including his correspondence, are in existence. The task was undertaken by Southey and afterward by Gleig, but for some unexplained cause was relinquished.

WOLFENBÜTTEL, a city of the duchy of Brunswick, on the river Ocker, 8 m. S. of Brunswick; pop. 9,500. It is situated in a marshy region, and has a citadel, 4 churches, and a library of 270,000 volumes, of which Lessing was once librarian. Until 1754 Wolfenbüttel was the residence of the dukes of Brunswick.

WOLFF, Emil, a German sculptor, born in Berlin, March 2, 1802. Having gained a prize at the royal academy of arts, he went to Italy in 1823 as a pensioner of Frederic William III., and has ever since resided in Rome, but has made several journeys in Germany, Italy, and Greece. He is held to be one of the first of German sculptors, and has executed many mythological and *genre* statues which have been greatly admired. In portraiture, a bust of Niebuhr is among his masterpieces.

WOLFF, Joseph, D.D., LL.D., a clergyman of the church of England, of Jewish parentage, born at Weilersbach, near Bamberg, Germany, in 1795, died at Isle Brewers, Somersetshire, May 2, 1862. He was the son of a rabbi, but early determined to become a Christian, taught Hebrew for a time at Frankfort and Halle, studied at Munich, Weimar, and Vienna, passed a year in the family of Count Stolberg at Frankfort, and in 1815 went to Rome. He entered first the *Collegio Romano*, and in 1817 the college of the propaganda, intending to become a missionary. Dismissed for heresy, he was sent to Vienna in 1818, and subsequently to the monastery of Val Saint in Switzerland, where he was kept under surveillance; but he was so incorrigible that he was finally suffered to go where he pleased. He now went to England, united with the English church, spent two years at Cambridge, studying oriental languages, preparatory to going out as a missionary to the Jews in Palestine, and in April, 1821, embarked for Gibraltar. After visiting Malta, Alexandria, and Cairo, he reached the Holy Land, spent some time in Palestine, visited Mesopotamia (where he fell among the Koordish robbers and was bastinadoed), Armenia, Bagdad, and Bassorah, and after traversing the greater part of Persia, returned home by way of Circassia, the Crimea, and Constantinople, and reached Dublin in May, 1826. In Feb. 1827, he married Lady Georgiana Walpole, a daughter of the earl of Orford, and in April of the same year set out on another missionary tour, being accompanied by his wife to Malta, and thence proceeded to Smyrna, the Ionian islands, and Jerusalem, where he was poisoned by some bigoted Jews, and narrowly escaped death. On his recovery he returned to Greece and Constantinople, and thence set out for Bokhara by way of Persia. On the journey he encountered the plague, was repeatedly robbed, was taken prisoner and sold as a slave, but finally reached Bokhara. After 3 months' residence and missionary labor among the Jews there, he started for India. Falling into the hands of the Kharijee, a savage tribe of Mohammedan seceders in the Doab, he was stripped of every thing, and had to make his way through the mountain passes naked to Cabool, a distance of nearly 600 miles. Pursuing his way from Cabool without interruption, he visited the Punjaub, Lahore and the court of Runjeet Sing, Loodiana, and Simlah, where he was the guest of Lord William Bentinck, the governor-general. He next traversed Cashmere, and visited Delhi, Benares, Lucknow, and the other principal cities of India, reaching Calcutta in March, 1833. From Calcutta he went to Hyderabad, and thence to Cochin, and having visited the Jews of that region and of Goa, proceeded to Bombay, whence he sailed for Arabia. He spent some time in Abyssinia, acquired the Amharic language, and returned to England *via* Malta in the summer of 1834. In Jan. 1836, he again visited Abyssinia, where he was worshipped by the natives as their new *aboona* or patriarch, visited the Rechabites of Yemen, met a party of Wahabees in the mountains of Arabia, who horsewhipped him because they could find nothing in the Arabic Bibles he had given them about Mohammed, and in 1837 sailed for Bombay, and thence to New York, where he arrived in Aug. 1837. Here he received deacon's orders in the Protestant Episcopal church, visited the principal cities, preached before congress, and in Jan. 1838 returned to England. He next visited Dublin, received priest's orders, and was afterward settled as curate, first at Lenthwaite, and then at High Hoyland in Yorkshire. In 1843, when the news of the imprisonment of Col. Stoddart and Capt. Conolly (a personal friend) at Bokhara reached England, he offered to attempt their release or learn their fate. The British government were unwilling to send him officially, but individuals furnished the means. Dressed in his doctor's hood, clergyman's gown, and shovel hat, with a Bible in his hand, and announcing himself as "Joseph Wolff, the grand dervish of England, Scotland, and Ireland, and of the whole of Europe and America," he made his way without much difficulty through Persia to Bokhara. Before reaching there he learned that Stoddart and Conolly had been beheaded. At Bokhara he was made a prisoner, and condemned to death; but on the day fixed for execution the Persian ambassador interfered, and he was enabled to make his escape, and to avoid the assassins sent after him. He arrived in England in 1845, and settled as parish priest in the little hamlet of Isle Brewers, Somersetshire, where he spent the rest of his life. He published "Journal of Missionary Labors" (1839), "Mission to Bokhara" (1846), "Missionary Labors and Researches" (1850), and "Travels and Adventures of Rev. Joseph Wolff, D.D., LL.D." (2 vols. 8vo., 1860–'61).

WOLFF, Oscar Ludwig Bernhard, a German author, born in Altona, July 26, 1799, died in Jena, Sept. 16, 1851. He began to study medicine at Berlin and Kiel, but abandoned it for belles-lettres, and became a teacher at Hamburg. He developed a remarkable talent for poetical improvisation, of which he gave public exhibitions. Goethe became much interested in him, and in 1826 he was appointed professor of modern languages at the gymnasium of Weimar, and in 1830 extraordinary professor at Jena. His novels and tales he collected under the title of *Schriften* (14 vols., Jena, 1841–'3). He published a great number of popular compilations, of which the *Poetischer Hausschatz des deutschen Volkes* (20th ed., Leipsic, 1861) is the best known.

WÖLFFL, Joseph, a German pianist and composer, born in Saltzburg in 1772, died in London in 1814. He was a pupil of Leopold Mozart and Michael Haydn, performed with success at Warsaw in 1793, went to Vienna, where he was Beethoven's rival on the pianoforte, in 1795 produced his opera of *Der Höllenberg*, and after visiting England and giving concerts with much success, became music master of Josephine Bonaparte in Paris, and in 1801 produced there an opera called *L'amour romanesque.* After Napoleon's downfall he returned to England, and died in poverty. More than 50 of his productions were printed.

WOLFRAM. See Tungsten.

WOLGA. See Volga.

WOLLASTON, William, an English philosophical writer, born at Coton-Clanford, Staffordshire, March 26, 1659, died in London, Oct. 29, 1724. He was admitted a pensioner of Sidney Sussex college, Cambridge, in 1674, where he remained till 1681, when he became assistant master, and in 1686 head master, of Birmingham school, at the same time filling a lectureship on Sunday in a chapel two miles distant. In 1688, inheriting an estate, he removed to London, where he henceforth lived. His most celebrated work, "The Religion of Nature Delineated," was published in 1724, just before his death, and within a few years, according to Dr. Clarke, more than 10,000 copies of it were sold. It contains a peculiar ethical theory, according to which moral distinctions are determined by the truth of things. Those propositions are true which express things as they are; a true proposition may be denied by deeds as well as words; and any act of omission or commission which violates truth, that is, which denies a true proposition, is morally evil. The work was censured for making no mention of revealed religion, which the author intended to treat in a second part. He left also several manuscripts, and many others he destroyed near the close of his life.

WOLLASTON, William Hyde, M.D., an English physicist, born in London, Aug. 6, 1766, died there, Dec. 22, 1828. He was educated at Caius college, Cambridge, and received the degree of M.D. in 1793, but after a time abandoned his profession and devoted himself to chemistry. He contributed 38 papers to the "Transactions of the Royal Society" (of which he was president in 1820), each on some important discovery or application of physical science. Several of Dr. Wollaston's inventions have been of great advantage to science, particularly his sliding rule of chemical equivalents; his minute galvanic batteries, so small as to be contained in a thimble; his goniometer for the accurate measurement of the angles of crystals; his camera lucida; and his instrument for drawing platinum wire of extraordinary fineness. His discoveries in regard to the malleability of platinum, and his subsequent manufacture of vessels of it for the distillation of acids, are said to have brought him more than £30,000.

WOLLSTONECRAFT, Mary. See Godwin, Mary Wollstonecraft, vol. viii. p. 332.

WOLOWSKI, Louis François Michel Raymond, a French economist, born in Warsaw, Aug. 31, 1810. The son of a former president of the Polish diet, he spent several years in France as a student, returned to Warsaw in 1827, took an active part in the Polish revolution of 1830–'31, was sent to Paris as secretary of the Polish embassy, established in 1833 the *Revue de législation et jurisprudence*, was naturalized as a Frenchman in 1834, became in 1839 professor of legislation at the *école des arts et métiers*, and in 1848 was elected a member of the constituent assembly, and in 1849 of the legislative assembly. He retired from political life in 1851, and founded the company of *crédit foncier*, and in 1855 became a member of the academy of moral and political sciences. He has published much on political economy.

WOLSEY, Thomas, an English prelate and statesman, born in Ipswich in 1471, died in Leicester, Nov. 29, 1530. There is a tradition, not very probable, that he was the son of a butcher. Having been graduated at Magdalen college, Oxford, at the age of 15 he was elected a fellow of his college, taught a school connected with it, and at the proper age received holy orders. His first preferment in the church was the living of Lymington, Somersetshire, where it does not appear that his conduct was irreproachable, for Sir Amias Poulet put him in the stocks. By the interest of a Somersetshire gentleman he obtained in 1506 the appointment of chaplain to Henry VII., and afterward attached himself to the service of the bishop of Winchester, by whose recommendation he was intrusted with a secret mission to the emperor Maximilian. His dexterity in this employment was rewarded in 1508 with the rich deanery of Lincoln. Early in the next reign he was appointed almoner to Henry VIII., and so captivated the young monarch by his pleasing address and gay disposition, that Henry often resorted with his favorite companions to Wolsey's house. During the war he went with the king to France, was charged with victualling the army, and after the capture of Tournay became administrator of that see (1514). Suitors at court now eagerly bought his patronage, and he grew rapidly rich. Before the end of the year he was archbishop of York. In Sept. 1515, Leo X. made him cardinal priest of St. Cecilia beyond the Tiber, hoping through his influence to gain the aid of Henry against the French. Three months later he was created lord chancellor of England, and in 1518 received from Leo the appointment of legate *a latere*. The commission was limited to two years, but he obtained successive prorogations and additional powers, and at length exercised within the realm nearly all the prerogatives of the sovereign pontiff. Beside the regular emoluments of his offices, he farmed the revenues of the sees of Hereford and Worcester, held *in commendam* the abbey of St. Albans and the bishopric of Bath, drew from the king of France an annuity of 12,000 livres as compensation for the bishopric of Tournay, and received 7,500 ducats a year from the revenues of the bishoprics of Toledo and Plasencia in Spain. His household comprised from 500 to 800 persons, among whom were knights and barons, and the sons of many distinguished families. "In his privy kitchen," says Cavendish, "he had a master cook, who went daily in velvet or in sattin, with a chaine of gould." No other subject has ever approached his wealth and influence. He built the magnificent palace of Hampton Court, and as soon as it was finished gave it to his sovereign. He had the tact to govern the state without letting Henry know it; and if he ever urged a measure contrary to the royal inclination, he desisted before he had given offence, and entered with zeal into the opposite views of the king. Thus, while Henry took a personal share in all important state affairs, it was Wolsey who directed them while seeming to be guided by the royal instructions. He was constantly informed of the secret proceedings of the continental courts, and so skilfully preserved the balance of power between the royal houses of France and Austria that, as long as he presided in council, he was feared and courted by popes and princes, while the king held the position of arbiter of Europe. After the death of the emperor Maximilian, Henry VIII., Francis I., and Charles of Spain, Maximilian's grandson, became candidates for the imperial throne, and both Henry and Francis held out to Wolsey the prospect of the papacy in the event of their success. His ambition was disappointed by the election of Charles. In 1520 he was appointed commissioner to arrange the meeting between the kings of France and England on the "field of the cloth of gold," near Guines. On the way Henry was met by the new emperor at Canterbury, and Charles propitiated the cardinal's friendship by promises and presents. In France Wolsey visited the king and remained with him two days, the result being a new treaty with England. In the following year he was chosen arbitrator between Charles and Francis, and took the opportunity to visit the emperor at Bruges and arrange a secret treaty for a joint invasion of France. When the war commenced, he was charged with the task of raising money. On the death of Leo X., and again on that of Adrian VI., he aspired to the tiara, but the opposition of the French cardinals was an insuperable obstacle to his election. The doctrines of Luther were now beginning to disturb the Christian world, and Wolsey, entering warmly into his sovereign's projects for suppressing them in England, ordered every obnoxious publication to be delivered up within a fortnight, and commissioned the bishops to pronounce excommunication against the refractory. The infamy of first suggesting to the king the divorce from Catharine of Aragon was charged upon Wolsey by the emperor, and the cardinal admitted or denied it according to circumstances; it is certain that he offered his aid in procuring it. As a preliminary step Henry sent him to France to persuade the king to forego his claim to the hand of the princess Mary, the daughter of Henry and Catharine. Wolsey however seems to have looked to a future alliance of Henry with Renée of France; and when the king disclosed to him his passion for Anne Boleyn, he fell on his knees and besought his master to recede from a project which would cover him with disgrace; but he soon became a convert to the measure which he could not avert. In 1528 he was empowered, together with any one of the other English prelates, to inquire into and decide upon the validity of the marriage between Henry and Catharine, and to divorce the parties if it was invalid. This commission from the pope filled him with alarm. He began to hesitate; he must decide either against the king or against his conscience; Anne Boleyn, too, and her family were his enemies. In this dilemma he procured Cardinal Campeggio to be associated with him. The trial dragged on for several months, and at last Campeggio persuaded the pontiff to revoke the commissions of the legates and call the case to Rome. The influence of Wolsey now sensibly declined; he was suffered to remain a whole month without an invitation to court. At last (Sept. 20, 1529) Anne extorted a promise from her royal lover never more to speak with the cardinal, and on Oct. 9 the attorney-general filed two bills in the king's bench charging him with having as legate transgressed the statute of *premunire.* Wolsey ordered his attorney to plead guilty to this iniquitous indictment, resigned the great seal (Oct. 17), transferred to the king the whole of his personal estate, valued at 500,000 crowns, and made over to him the yearly profits of his ecclesiastical benefices, and by the royal permission then retired to Esher, a seat belonging to his bishopric of Winchester. Henry was not yet prepared to abandon him. He sent him gracious messages, and when he had been impeached in parliament of 44 real or imaginary offenees, caused the bill to be thrown out. Through the agency of Thomas Cromwell, who from the service of the cardinal had entered that of the king, Wolsey was ultimately allowed to retain the temporal and spiritual administration of the diocese of York, on condition that he should make over to the crown all the profits and nominations to office and advowsons in his gift as bishop of Winchester and abbot of St. Albans; and in return he received a general pardon and an annuity of 1,000 marks. After a short residence at Richmond, he was commanded (April, 1530) to retire to the limits of his archbishopric. Here his thoughts seemed devoted to the duties of his station. He celebrated mass regularly in public, gave liberal alms, reconciled families at variance, entertained the gentlemen of the county at his table, and conciliated general esteem. His enemies at court, however, were not idle. On Nov. 4 he was arrested at Cawood on a charge of high treason, and conducted toward London. He was suffering from dropsy, and the journey was necessarily slow. As he entered the monastery of Leicester he said to the abbot: "Father abbot, I am come hither to leave my bones among you." He was at once carried to bed. The second day, seeing the lieutenant of the tower in his chamber, he said to him: "Master Kyngston, if I had served God as diligently as I have done the king, he would not have given me over in my gray hairs. But this is the just reward that I must receive for my diligent pains and study that I have had to do him service; not regarding my service to God, but only to satisfy his pleasure." He expired the next morning. "The best eulogy on his character," says Lingard, "is to be found in the contrast between the conduct of Henry before and after the cardinal's fall. As long as Wolsey continued in favor, the royal passions were confined within certain bounds; the moment his influence was extinguished, they burst through every restraint, and by their caprice and violence alarmed his subjects, and astonished the other nations of Europe." "I hear no widows' sighs," says Thomas Fuller, "nor see orphans' tears in our chronicles, caused by him. Sure in such cases wherein his private ends made him not a party he was an excellent justicer; as being too proud to be bribed, and too strong to be overborn." The king always spoke favorably of his memory and regretted his death. He was a man of some learning and a munificent patron of letters. He heaped preferment on native scholars; invited the most eminent scholars to teach in the English universities; established at Oxford 7 lectureships; and founded Christchurch college at the same university, beside a college at Ipswich intended as a nursery for it. His life was written by Cavendish, his gentleman usher (London, 1641).

WOLVERENE. See GLUTTON.

WOLVERHAMPTON, a town of Staffordshire, England, 12 m. N. W. from Birmingham; pop. in 1861, 60,858. It is situated in the centre of the great midland coal and iron mining district, and has manufactures of almost every article produced from iron, steel, and brass. The town has communication with all parts of Great Britain by numerous railways, and also by canal. It is a place of considerable antiquity, though little is known of its history till 996, when Wulfrune, sister of Ethelred II., endowed a church and college here. The town was then called Hampton, and afterward Wulfrune's Hampton, which has since been corrupted to the present name. Wolverhampton returns 2 members to parliament.

WOLZOGEN, KAROLINE VON (VON LENGSFELD), a German authoress, born in Rudolstadt, Feb. 3, 1763, died in Jena, Jan. 14, 1847. When scarcely 16 years old she married the privy councillor Von Beulwitz, but was not long afterward separated from him, and in 1796 married the chancellor of the court of Weimar, Wilhelm, baron von Wolzogen. In the autumn of 1787 Schiller became a regular guest in the house of her mother, and soon afterward was affianced to her younger sister Charlotte. She first appeared as a poetess in an anonymous work entitled *Agnes von Lilien* (2 vols., Berlin, 1798), which at first was thought to be the production of Goethe. She published after a long silence some little tales entitled *Erzählungen* (2 vols., Stuttgart, 1826-'7), and subsequently a life of Schiller (2 vols., Stuttgart and Tübingen, 1830). In 1840 she published *Cordelia* (2 vols., Leipsic).

WOMBAT (*phascolomys wombat*, Per. and Les.), a herbivorous marsupial mammal, inhabiting New South Wales, S. Australia, Tasmania, and the small islands in the Bass's straits. The generic name means pouched rat; it is also called badger by the colonists from its burrowing habits, and ursine opossum from its resemblance to a small bear. In the teeth and gnawing propensities it greatly resembles a rodent animal, the incisors being 2 in each jaw, long and chisel-like; canines wanting, leaving a considerable gap between the incisors and molars; the latter are rootless, with flat crowns surrounded by enamel, there being a deep furrow down the inside of the upper and outside of the lower ones; the whole number of teeth is 24; the body of the atlas remains permanently cartilaginous, the ribs are 15 or 16 pairs, the humerus has an opening between the condyles and the inner one perforated, and the patella is absent; there is a short cæcum and vermiform appendage. It is 2 or 3 feet long, plump, with a thick coat of long, grayish brown, woolly hair; head large, wide, flat, and rabbit-like, with upper lip cleft, and small eyes and ears; legs short and nearly equal, and the feet 5-toed, all except the small inner one of the hind feet with long claws; tail very short, ½ inch, nearly naked. The animal walks on the soles, which are broad and naked. It is nocturnal and slow-moving, living in holes among the rocks or in burrows dug by itself; the food consists of grass and roots, which it digs up with its claws; it is gentle and easily domesticated, and has 3 or 4 young at a birth, which are tenderly cared for by the mother; several specimens have been kept alive in Europe, especially in England; in the mountainous districts near Port Jackson its flesh is preferred to that of all other animals of Australia, being very delicate, with somewhat of the fatness and flavor of pork, but of a red color and coarser fibre. Remains of a fossil species have been found in the caves at Wellington valley, Australia.

WOMERA. See Boomerang.

WOOD, the well known hard substance, having a texture more or less completely fibrous, which constitutes the inner and principal portion of the trunk, branches, and roots of trees and shrubs. In all phænogamous or flowering plants, a central column or axis, the height of which may vary from a few inches to more than 100 feet, presents itself; the middle portion of this, the stem, divides below into the roots; above, usually, into branches. In herbaceous plants, the body of the stem, roots, and branches remains chiefly composed of a merely cellular structure (parenchyma—an example of which, quite unmixed with other forms of texture, is seen in the pith of elder); or the fibres that appear continue in their primitive and softer condition, that in which their substance is proper cellulose; or, if more hardened and numerous, they still do not constitute perfect woody tissue, or wood, in the proper sense of the term. The latter may be described as a compact, mainly fibrous mass, which cuts readily, but without easily crushing together, and so as to present a firm, smooth surface. The fibres which, on cutting into or splitting it, are seen as if making up almost the entire substance of wood, and most of which run lengthwise of the part they are in, originate by the elongation of certain cells, each fibre being formed by a firm union of several of the latter, end to end. Laterally, these fibres present themselves in great numbers, being closely crowded together; and they are further thickened, and agglutinated one to another, by a deposit from the circulating juices of the plant of a mixture of gummy, resinous, and mineral matters (the last of which remain, on burning, as ashes), this deposit hardening gradually, and imparting to the wood a good degree of its consistency and of its power to resist cleavage. The vegetable matter proper of the firmer fibre of wood has been supposed to differ chemically from soft woody fibre (cellulose), and has accordingly been named lignine; but probably the real difference between wood and the stem of herbaceous plants consists in the greater number of the fibres in the former, and the presence in larger amount of the peculiar matters coating the fibres, the actual vegetable substance being the same in both. If, however, an exact definition of wood, chemically or physiologically considered, can hardly yet be given, still the distinction between wood and herbaceous substance is in the extremes, as between maple or ash on one hand and the stem of grass or asparagus on the other, sufficiently obvious; though in intermediate forms, as in case of canes, palms, &c., it is sometimes difficult to determine whether the substance of a stem should or should not rank as wood.—Woody plants are divided into trees and shrubs; the former class including all those of which the height is generally more than about 30 feet, and which, as a rule liable to some exceptions, do not branch near the ground; the latter class, those ordinarily not reaching above 30 feet, and branching to the ground. In trees and the larger shrubs, the stem takes the name of trunk. The woods furnished by the various trees and shrubs with which most parts of our globe are abundantly supplied are exceedingly various, and among the most important of the materials afforded by the vegetable kingdom. In the different countries, a very great number of sorts of wood are in use for purposes of construction and of the arts; and compared with the total, the number of sorts employed or familiarly known in any locality is usually very inconsiderable. In fact, all trees and shrubs may furnish wood of more or less value for some purposes of art or manufacture; but as, for the building and repairing of houses, ships, and machinery, woods affording considerable bulk are generally desired, these are sought in trees; and it is to such woods that the name timber is properly given. Among the chief timber trees in the United States may be named the oak, ash, pine, and elm. In view of the many and peculiar uses to which timber and other wood must be continually put, some acquaintance with its general structure and the differences this may present becomes important. The stems of all plants must be regarded as consisting originally of a cellular mass, or parenchyma, only. Into or between the parts of this cellular structure, the fibres are, as it were, subsequently pushed or thrust in the act of their development, the great body of them having in all cases a direction generally vertical, that is, in respect to the stem or part they are in, longitudinal. But in respect to the distribution of the fibres through the stem, and the situation in which the new fibres added during the growth of the plant appear, two general plans or types of structure are found, which are readily distinguished on observing the wood or substance of the stem, and which correspond to obvious distinctions of external character and appearance of the plants. In that one of these which occurs almost invariably in the trees of temperate and frigid climates, the stem presents a central pith and an exterior and separable bark, between which wood is formed in a succession of concentric layers, one for each year, and from within outward; so that a cross section of such a stem shows a series of rings or circles of wood, concentric with the pith and with each other, and reaching to the bark, known as the "annual rings." As these are successively deposited without those previously existing, that is, one each year directly beneath the bark, the plants showing this mode of formation are described as exogenous (outside-growing), or are called exogens. In the second form, more common in tropical regions, the woody fibres are not formed in layers, but as separate threads or bundles running without apparent order through the parenchyma or pith, which here occupies nearly the whole of the stem, while the tougher rind which serves as bark, though not separable from this interior portion, is next in contact with it. A cross section of a stalk of Indian corn or of sugar cane shows this mode of formation—the pith, with irregularly distributed fibres running through it, and surrounded by an adherent rind; and the structure is essentially that of all the canes, palms, &c. As the new wood is in these cases formed within, intermingling with the old, and merely enlarging the stem by distending it generally, plants of this sort are described as endogenous (inside-growing), or are named endogens. Into the structure of both these forms of stem, beside the cells and fibres, enter a large number of ducts or vessels for the conveyance of the sap.—The ordinary class of trees in temperate latitudes, and by far the most numerous in all parts of the world, are the exogenous. The first year's growth of wood in any of these occurs in a series of bundles arranged in a ring within the stem, and leaving within them a central pith (medulla). These bundles mainly displace the cells where they form, and, becoming enlarged, take severally a sort of wedge form, crowding and compacting the cellular substance into as many flattish plates between them, these pointing from the pith outward to the bark. In the forming of each added circle of wood, a like result takes place; there are wedges of fibres which form, and cellular texture compacted between; and in the succeeding years there is generally a continuity of these flattened plates of medullary substance, from the centre out through all the annual rings formed up to the given time. These plates, however, are not entirely so regular as here supposed, but are liable to leave off or discontinue at short distances along the longitudinal fibres, reappearing immediately above between other near fibres, and so on; and the separate strips or bands of medullary substance thus constituted are of different widths in different sorts of wood. These plates or strips thus have a direction at right angles to that of the fibres proper; and radiating from the middle of the tree to its periphery, they are called the "medullary rays." These are most numerous, of course, in the outermost rings of wood, those in the earliest rings dividing in proceeding outward, or new ones forming. The result is, that the wood appears as if made up of two sets of fibres, the vertical, previously described, and the horizontal or radiating; and the effect of the latter, though not fibres in fact, is, through their intimate and firm union with the fibres of the successive rings which they cross, greatly to increase the lateral strength or resistance to cleaving of the wood. The two transverse systems thus forming the wood have been not inaptly compared to the warp and woof of woven fabrics. In some woods, the medullary rays are so broken up and severally small or irregular, that on splitting or planing the wood no very evident traces of them appear; but when they are broader or more continuous, as they are in the oak, sycamore, maple, some pines, &c., upon splitting, and still more upon planing, they appear as successive glistening plates or strips, sometimes brought to view in regular and beautiful order. These constitute the "silver grain" of such woods; for many purposes they render the wood decidedly ornamental. Directly about the pith, in a perfect stem or twig, a ring composed of spiral ducts appears, called the "medullary sheath." Many stems, however, expand so rapidly in their early growth that the pith is torn asunder, the pith and the sheath now named disappearing; and the tree or shrub is hollow, and may even decay within while still growing —one cause of which last result will presently be referred to. The circumstances which lead to the clear marking generally of the annual rings to the eye are, that in the outer portion of each year's growth the fibres are more numerous and the ducts fewer and smaller, while in the inner portion the fibres are few, the ducts more numerous and larger; and often that the outer part of the ring becomes of somewhat deeper color. Each year's growth thus presents itself as a ring of compact wood shading off into a more loose or porous portion.

The inner bark of the tree also containing many vessels, the course of the circulation of sap is as follows: the crude sap from the roots ascends within the vessels of the annual rings of wood, to the leaves, and undergoing condensation and elaboration in these, it returns charged with organizable materials mainly or wholly through the vessels of the inner bark. These matters, in a mucilaginous state, being poured out during the summer between the bark and the outermost layer of wood previously formed, constitute the cambium; and upon the two surfaces of this a new layer of wood and of bark respectively take their origin with each year. —Of the endogens, some, as the canes, palms, and palmetto, usually preserve the pith entire; others, as the grasses and bamboos, become hollow, except that a somewhat loose texture extends through them at the joints. Few of the endogens branch in the manner of ordinary trees. The palm and palmetto may be taken as good examples of this class; and in these the long, pendent leaves form a clump or tuft at the top, the annual growths being marked by rings at successive heights upon the bark, and the uppermost joint or growth being often succulent, like a young vegetable. The fibres in many cases proceed in bundles, one bundle from the base of each leaf down through the pith, and accompanied by vessels for the sap, to the root. The consequences are, that the fibres, running somewhat irregularly within the stem below, turn out at their upper ends, and terminate in some ring upon the bark which marks the position from which a year's leaves have fallen off; that the stem is very soft and wholly worthless for working in the upper parts, but grows gradually more fibrous lower down; so that only a few feet of the stem nearest the root may deserve the name and serve the purposes of wood. —The quality and value of the wood of ordinary or exogenous trees are very closely associated with the formation and peculiarities of the annual rings. The different exposures of the different sides of the same tree to sunlight, heat, and air, result in developing some side or sides of the tree more than others; thus, on the southern side of a tree favorably exposed, the rings are thicker, the growth of wood being greater, than on the north; and if a tree grow close to a wall or other obstruction, the side so shielded is correspondingly restrained in its growth. Through these and other causes, it is seldom that the heart of a tree is central, or that the rings and section are circular. Usually, the rings will show differences in thickness, first in the different parts of each, and secondly in the thicknesses of successive ones, beside that there is a general thinning of the rings from the outermost inward, resulting from a gradual consolidation of the wood with age. Where the rings are quite distinct, the counting of them is commonly resorted to for the purpose of ascertaining the age of the tree; but as some of them may discontinue or become confused in certain parts, the operation requires much care, or can give but an approximate result; in very old trees, or in those in which, as often happens, the distinction of the rings is mainly obliterated, such a calculation becomes impossible. In the latter instances, more common in tropical trees, in case of which the seasons of growth and rest are not so strongly marked, the timber is more homogeneous, and for certain fine sorts of work correspondingly valuable. The character of the rings, however, is not a sure criterion of the quality of woods. Thus, instances are related in which specimens of Scotch larch having but 3 rings in $\frac{5}{8}$ of an inch, and of Italian larch having 24 layers within the same thickness, had still very nearly equal specific gravity, strength, and durability. In common trees, after a few successive rings have formed, the wood of the innermost of these having ceased to take any part in the vital operations of the plant, its interstices and ducts also become more completely filled and solidified with the deposited or incrusting matters from the sap. Thus, the younger and active layers of the wood are continually receding from the heart of the tree; and probably at the same rate the inner rings successively become hardened and thrown out of the circulatory system. In many of the softer woods, this change goes on with little alteration of the appearance or color of the inner portions of the tree. Such is the case with the white pine, willows, poplars, and chestnut, which are nearly equally white through their entire thickness, and these are accordingly named white woods; the name of whitewood is, from the circumstance mentioned, in America given especially to the *liriodendron tulipifera*, also called tulip tree. In other woods, and particularly those of the harder sort, the deposit of the incrusting matters in the inner layers is attended with a distinct and deeper coloring of the wood, as seen in the brown heart of the oak and black walnut, the purplish red of red cedar, the yellow of the barberry, and the black of ebony. When thus plainly distinguished, the inner cylinder of hard wood is called the heart wood, or *duramen* (Lat. *durus*, hard), and the surrounding softer layers the sap wood, or *alburnum* (*albus*, white). In general, for each species of tree the sap wood has a certain average thickness; in some trees, as the box, this average is little more than the thickness of a stout card; in the snakewood and some others it forms fully two thirds of the entire diameter, so that a large tree may yield but an inconsiderable stick of the harder wood. The continued, slow decay of certain trees at or within the heart, while the sap wood remains unaffected, and the growth may still be vigorous, is at once the effect and evidence of the cutting off of the former from any participation in the circulation of sap. Some of the hardest foreign woods, as king wood, tulip wood, and others, are rarely sound in the centre; and the want of distinctness in the annual rings in these implies a slow growth and great age, that may form the explanation of such decay. The sap wood of trees, being less matured and solidified, and more liable to decay also from the greater difficulty of freeing it from water, is generally rejected in the procuring of timber for uses requiring durability. But for some purposes of manufacture both heart and sap wood are used; and through their differences of quality, the two from the same tree may be put to very different uses. So, the roots of some trees furnish a wood quite different again in its texture and colors, and hence in its uses, from either of the former; and even knots and abnormal growths, on a like principle, become valuable for particular sorts of ornamental work. The woods of different trees differ to a remarkable extent in the resistance they oppose to decay; so that while some of them cannot be preserved in the ordinary condition beyond 2 or 3 years, others decay so slowly that when opened after many centuries they are still sound within, and even preserve their fragrance. For timbers desired to be durable, the trees should be allowed to a good degree to complete their growth; as otherwise, even the outer heart wood is still softer than it should be, and more impregnated with sap.—Upon felling a tree, its organic life ceases; and if then, as is usual, it lies exposed to air, a gradual evaporation of its sap begins, with drying and shrinking of the tissues before distended by it. In order to obtain the wood in that state in which it is the freest possible from sap, the trees should be felled in the cold months, when the circulation is arrested. A writer in "Cosmos" (1861) gives results as to strength, durability, and imperviousness of woods—pine and oak—felled by him in the months of December, January, February, and March, respectively, and then exposed in different ways; and he finds that in all the particulars named the woods cut in December were by far superior. But at whatever time trees may be felled, the vessels of the outer wood must still contain sap, and indeed the whole wood is completely penetrated with some degree of moisture. Thus, no wood is fit for use when freshly cut down; the juices of the wood must as far as possible be got rid of, and the processes by which this result is secured are called "seasoning." Under conditions of moisture, air, and heat, most woods commence a course of rapid decay; those which can longest resist this change being sound heart wood, but more especially that impregnated with resinous materials. This ordinary mode of decay begins with a sort of fermentation, and continues generally by moist decomposition, until the timber loses its structure and woody character, and finally is converted to a mass of humus. Such decay is arrested at some little depth in water, or at least greatly prolonged, because, though moisture is abundantly present, air is in good degree excluded. Beside this usual decomposition of wood, there is a species of decay which may affect the best ordinarily seasoned timber, and at any time in course of its use. (See Dry Rot; and for the several means in use for guarding against either species of destructive change, see Preservation of Wood.) Among the more or less familiar mischiefs following the use of wood not suitably prepared by seasoning, are, the frequent splitting radially from the centre of blocks cut from the whole log, or of quarters of such, and sometimes in the course of the rings; the irregular contraction of large pieces from the quarters, which become oval in shrinking; and the shrinking and warping of flat pieces and boards after being put to use, so that in panels they recede from one side, or if held unyieldingly split in an unsightly manner. Generally, timbers or boards do not in drying shorten materially in length; and as a rule, the softest woods shrink most in width, the greatest extent being usually a half inch to the foot; rock elm has been observed to shrink as much as this, while teak scarcely contracts at all. Indeed, since wood is hygroscopic, *i. e.*, has in degree an attraction for moisture, the disposition to swell slightly in moist seasons or climates, and contract or warp on exposure to those of comparative dryness, can never be entirely obviated, however complete the seasoning. Thus, it is a well known fact that cabinet ware, the cases of pianos, &c., however well seasoned before making in European countries, upon being subsequently brought to America, are much more liable to shrink or crack upon exposure to the drier atmosphere here existing, than similar articles properly prepared and manufactured here. Whether woods have been sufficiently or but partially seasoned, they are in greater degree protected against change through atmospheric influences, so long as they are kept well defended by paint or varnish.—The seasoning of timber should not, at least in the outset, be too rapid; as the speedy drying of the ends may obstruct the escape of the juices from the middle parts, and the wood is also likely to lose toughness and pliability. Rough timber is improved by lying, separate or stacked, but raised a little from the ground. Sided timber, planks, and lumber should preferably be stowed under sheds, being placed in racks, or piled, the successive pieces in each vertical course in the latter case being separated by transverse slips of wood at not many feet distance, the courses being also a little way apart, so as to allow circulation of air, and the sheds being airy and well ventilated. In this way, not only are boards properly dried, but the pressure renders the seasoned lumber flat and straight. In the air, thin stuff will sufficiently season, in this country, in about a year; thicker stuff and timbers generally can scarcely be sufficiently seasoned in 2 or 3 years. Where timber is to be squared or sawn, the early treatment of it in such way increases the exposure of the wood, and facilitates its seasoning. Among peculiar methods of expediting the preparation of the wood for use, are those of immersing it, immediately after felling, for some days or even months in running water, which appears to dilute and wash out the sap, and render the subsequent drying more rapid and complete; and of boiling or steaming, with a like object in view. In either of these ways, the appearance of the white woods is said to be improved. To complete the seasoning more thoroughly in the later stage, and however commenced, where practicable the woods are sometimes placed within suitable kilns, or in rooms kept heated by stoves; and a process of desiccation, by impelling currents of dry and properly heated air into and through chambers in which the wood is first suitably piled, the air with the moisture it withdraws being allowed escape through the roof of the building, has also been resorted to for seasoning on the large scale. In the last mode, hard woods and thick logs require a continued moderate heat, say 90° to 100° F.; the softer, as pine, 120° or higher, and when thin and firmly clamped, 180° to 200°; while Honduras mahogany has been every way improved by a heat as great as 280° to 300°. From boards up to 4-inch stuff, one week of the proper temperature is sufficient for each inch of thickness; beyond this, the time must be lengthened; and the best velocity for the current, requiring a sufficient inlet pipe, is 100 feet per second. Little is known respecting the seasoning in their localities of the foreign woods, though usually, when large, they are divided as a preparation; but notwithstanding the time often elapsing between cutting and importation, they are usually still so moist as to require further drying. The smaller woods intended for the lathe, as for making toys or other articles, are often divided or reduced at once to near the size and form required. The smaller hard woods are usually much more wasteful than those suitable for timber, a result arising not only from the indented, irregular, and ill defined outline which they more commonly present, but also from the greater liability to such imperfections as cracks and internal hollows or decay.—The attention of those interested in naval construction has been recently called to the circumstance that, since ships in building are now seldom left on the stocks for some years, as they formerly were, their timbers are subject to fail much earlier than was then the rule, through fermentative decay or dry rot. M. de Lapparent has proposed as a remedy to carbonize the timber in a new and peculiar manner. His method is to apply to the surface of the wood the inflammable gases, much in the way in which water is directed against a burning building. The carbonization of the surface induced is uniform, and it is said needs not exceed $\frac{1}{4}$ of a millimetre (about $\frac{1}{100}$ inch) in thickness. The result anticipated is the production of a coating quite impervious to air and moisture; and the expense of the process is not more than about 10 cents to the square yard. The process has lately been tried at Cherbourg, and it was regarded as proving completely successful.—Examined in thin slips under the microscope, the more spongy and compressible woods on the one hand, and the more compact and firm on the other, present differences by which they are readily distinguishable. Individually regarded, the fibres in the two kinds of wood have usually similar forms and dimensions; but in the more loose and spongy woods, such as willows, linden or basswood, and the lighter pines, the fibres are seen to be fewer, more scattered, often separated by considerable masses of cellular tissue; while in the more close and solid woods, such as oak, ironwood, and mahogany, though the fibres may appear smaller, they seem to be severally more dense or substantial, and they are also much more closely arranged or crowded together, the interposed cellular plates being greatly condensed, and the whole presenting a more compact formation. In a general way, the hardness or softness of woods, as detected upon working them with cutting or abrading tools, is in the ratio of their compactness or looseness of fibre. To this rule there are some exceptions, in part; since the actual hardness exhibited by a certain species of wood, or the very much greater hardness commonly to be met with in certain parts of a tree, may be due partly to the crowding together of the fibres, and partly to the character and amount of the incrusting matters. The resins appear often not only to cement the fibres together, but to add to the mass also a hardness due to their own complete solidification; the result is well seen in the outer layers of the annual rings of the yellow and red pines, especially after these have been long seasoned, the hard and horny character of these plates being well known to those who have attempted to cut them. Such woods necessarily possess great durability, not only by reason of their hardness, but also through their imperviousness to moisture and air, and their protection against the ravages of many species of insects and worms. As applied to woods, the terms soft and hard are of course relative only. The total range of variation from the lightest and most pithy woods, as basswood, to the lignum vitæ, and the hard knots and gnarls of many sorts of trees, is very great; and the gradations in the different sorts, often in the same tree, are practically numberless and undefinable. A tabular comparison of the average hardness of different woods, with the degrees admitted in the scale for minerals, would possess interest; but probably no such estimates have been made. Another and direct result of varying compactness in the fibre or substance of wood, is variation of density; and as this latter property determines the specific gravity or comparative weight of a wood, and is in practice directly known by the weight, these qualities may properly be considered together. Like the hardness of wood, the weight will increase both with compactness of fibres and also with the presence of the agglutinating matters. It follows that, in a general way, the weight or specific gravity of any wood can be taken as a very sure criterion of its hardness, and almost though not quite as certainly of its strength. The woods of the soft firs, poplar, willow, and many others, do not exceed, and many of them do not equal, half the weight of water; those of the hornbeam, locust, plum, some oaks, &c., approach more or less nearly three fourths the weight of water; while the Italian and African oaks, boxwood, ironwood, lignum vitæ, and the newly known ironbark of New South Wales, have a specific gravity almost invariably above 1, and so sink in water. Of these, the last named, having a specific gravity of 1.426, and a strength 1½ times that of English oak, is by many believed to be the heaviest and solidest wood known. Among the lightest sorts of true wood is the *cortiça* (*anona palustris*) of Brazil, its specific gravity being only 0.206 (cork, 0.24), and the wood of which, resembling ash, is however more whitish and soft. With many woods it is practicable to increase the density by compression, and that to a reduction of the bulk by fully a third or a fourth part. If the compression is upon two sides only, there is a tendency to crushing and loss of strength; but if it be evenly made on all sides at once, the wood is compacted without disruption of the fibres, and becomes similar to the naturally solid woods, gaining at once and proportionally in specific gravity, hardness, and strength. It is in this way that very durable treenails are made by driving, in some cases by a screw press, pins of pine or other softer wood through iron rings of less opening directly into the holes in a ship's timbers; on subsequently wetting them, the pins regain in part their volume, and they are thus more firmly fixed in place.—Usually, the properties of flexibility and elasticity go together in the different woods possessing them; though some woods are elastic to compression, or rebound upon striking or being struck by a hard body, in a greater degree than they are capable of bending without fracture in the straight piece. In fact, elasticity of wood to flexion and to compression may differ much in the same specimen or sort, and the two qualities require always to be distinguished. As directly connected with pliability, or the capability of being bent, the former sort has the most obvious applications, and will be alone considered. The most flexible, and (in the mode now specified) most elastic woods are found to be those of which the fibres are straightest, least inclined to interlace, and least interrupted by knots, curls, or the presence of the medullary plates. It will readily be seen that any marked interlacement or confused intermixture of fibres, or the frequent injection through the wood of large plates of the cellular substance, or numerous curls or turnings of the course of the fibres, must in any case give the effect of bracing the fibres in so many more directions, and must thus impart the opposite property of rigidity to the wood. Accordingly, it is the woods that cleave or split most freely and economically that are the most flexible and elastic, as seen in case of the ash, hickory, and lancewood; while those that split with great difficulty, and in so doing show ragged surfaces due to breaking of interlaced fibres and the other causes named, are the more rigid or unyielding woods, as for instance the elm, beech, sycamore, oak, and mahogany. The most complete rigidity is obtained in those woods in which the longitudinal fibres arrange themselves as it were in alternate sets, crossing or interweaving at some small angle with each other. As such woods are split with great difficulty, so they resist checking from the driving into them of bolts and pins better than others. Of this quality, among woods commonly known in this country, the elm probably affords the best illustration; and the fact that at the same time it is among the few woods which endure well either in water or when exposed to water and air by turns, has brought it greatly into use for wet constructions, as flumes, and for the planking of boats and ships. The fibres of the lignum vitæ show an arrangement in moderately thick layers crossing each other obliquely, and often at an angle as great as 30°; practically it cannot be worked by splitting, but must be prepared in all cases with the saw. A like rigidity, and from causes now explained, characterizes the wood of a tree at the part which includes and directly surrounds a knot, as in case of the putting forth of a branch, and also the branch itself, if, as commonly happens in some trees, this is also angular and knotty. It is hence for their rigidity, as well as for their usually available form, that the origins of branches of oaks, or their crooks, have been, under the name of "knees," so much sought for the timbers of boats and ships; though at the present time these are becoming largely superseded by iron knees, the form of which is wholly under control, while their strength gives an economy of space. For certain uses, the flexibility of woods is temporarily increased by processes of steaming or boiling. The woods, placed within suitable cylinders, are steamed until they become soft and pliable. They are then screwed or wedged at suitable intervals along their length in contact with rigid patterns, left to become cool and dry, and upon being released are found to have taken, in the main permanently, the form thus imparted. This process is resorted to for bending oak and other timbers for ship building, the staves of casks, shafts of carriages, &c. The continuity of the fibres throughout the bent pieces, and their running parallel with the curvature in all the parts, add greatly to the strength secured, while there is also a saving in material and in time and cost of preparation. The inner and outer plankings of ships, being suitably softened by steaming or boiling, can in that state be directly moulded to the ribs by fixing them by temporary screw-bolts, which are afterward to be replaced by the permanent bolts of copper. (See Bending Machine.)—The qualities of wood thus far considered are all of them such as prove of greater or less interest in connection with the selection of species of timber for ship building. To the statements relative to timber under Ship, some further facts will here be added. In the jury report, class iv., of the London exhibition of 1851, attention is particularly called to the importance, in examinations of the different sorts of wood with reference to durability, of ascertaining the nature of the incrusting materials deposited throughout its texture, preference being declared for those in which these are decidedly resinous. Those woods, on the contrary, in which the hygroscopic gummy matters prevail, season with difficulty, and are always more liable to decay. To sum up, so far as all these qualities can be secured together, the best woods are those having strong fibres, compact, not wholly straight, and the incrusting matters of which are least soluble in water, and thus least attract the atmospheric or surrounding moisture. Of the timbers recently in use in England for ship building, there are 8 descriptions that have been admitted as for their several purposes of the first value, viz.: English oak, American live oak, African oak, the *morung saul*, East Indian teak, greenheart, *morra*, and ironbark (the latest introduced). The morra and greenheart are from British Guiana; the morung saul is an East Indian tree. Beside the sorts thus already brought into use, it is quite certain that among the trees of India, and of South and Central America, there must be others of great value of which less is yet known. Mr. Leonard Wray, in a paper read before the English society of arts and published in their "Journal," May 6, 1859, gives a considerable list of comparatively unknown woods of Guiana, and of the countries bordering on the straits of Malacca, with their uses and relative values. Among the very compact and hard woods named by him are the *anau*, *podauk*, and the *pyau-ga-deau;* while of those specially recommended for ship timbers are the *ka-wat-na* (*cedrela odorata*) of Central America, a light and durable cedar, of large size, free from dry rot and attacks of insects; the *mayam*, a very indestructible, dark red wood; the *soondra*, one of the strongest of all the Indian woods; the *theug-ga*, an enormous tree, yielding a compact timber, superior to teak, and also exempt from rot and insects; the *murbouw*, strong and proof against insects, said to last 100 years; and the *binlaugoor*, from near Singapore, much sought for planks, spars, &c., and largely exported for such uses to Mauritius, California, and elsewhere. Mr. Wray finds that from Honduras there are now exported annually about 25,000 tons of mahogany and 6,000 tons of logwood, while the woodsmen in quest of these two staples continually pass by other timbers which would rank among the finest in the world; among these being the greenheart, the live and other oaks, the bullet tree, ironwood, locust, pines, and the cedar above described. He anticipates also that Australia will become an important timber-exporting country, among its most valuable large trees being the ironbark; the *tuart*, exceedingly indisposed to split; the *jarrah*, with straight stems, 65 feet without branch or knot, proof against insects and dry rot, and of which in Western Australia there are vast forests; and also others. Since the publication of Mr. Wray's paper, the British government has contracted for supplies of some of the timbers described, among them the Australian tuart and jarrah. The importance of a knowledge of the weight of the different sorts of timber, both as enabling the builder to estimate the weight and displacement of vessels, and as giving him, through the general correspondence of density and strength, a criterion by which with the heavier woods he may reduce the thickness of his timbers or planking without loss of strength, has led to the formation of tables such as the following, in which are given the weights of a cubic foot of the timbers named, and respectively in the green and seasoned state:

Name of timber.	Weight per cubic foot.	
	Green.	Seasoned.
English oak	71 lbs. 10 oz.	43 lbs. 8 oz.
Dantzic oak	49 " 14 "	36 " 0 "
African and Indian teak (nearly alike)	63 " 12 "	60 " 10 "
Cedar	32 " 0 "	28 " 4 "
Larch	45 " 0 "	34 " 4 "
Riga fir	48 " 12 "	35 " 8 "
New England fir	44 " 12 "	30 " 11 "
Elm	66 " 8 "	37 " 5 "
Beech	60 " 0 "	53 " 6 "
Ash	58 " 3 "	50 " 0 "

Of the Indian teaks, that from Malabar is considered the heaviest, that from Rangoon lightest; the latter, seasoned, weighing but 26 lbs. 4 oz. to the solid foot. In connection also with the subject of heavy timbers, see Bridge, and Carpentry.—The circumstances imparting beauty to certain species of wood, or fitting them for ornamental purposes, are mainly such as those already to some extent considered in connection with the general properties of wood, or those giving it value as timber. Among the elements of beauty or ornament in different woods may be named, on the one hand, a compact, homogeneous texture, especially when attended with decided color, and on the other, variety in the disposition of the fibres or grain, as seen in curls or figures, the appearance of the rings, and of the silver grain, knots, gnarls, and other irregularities of texture, and color, uniform or varied. Of woods taken generally, the beauty will depend much more frequently on qualities or peculiarities of structure than on those of color. Were the trunk of a tree made up by deposit of truly concentric rings, encasing one another like the tubes of a telescope, then any horizontal section of it would exhibit the effect of the rings as so many circles, while any vertical section would show parallel straight lines, and an oblique section ellipses. But the many causes of irregularity in the deposit of the rings and form of the trunk introduce endless deviations from such monotonous uniformity, some of them slight and gradual, others abrupt and striking; and a constant pleasing variety, and often decided beauty of figure, is the result. The horizontal or transverse section of a tree can exhibit only the rings and the medullary rays; but both by its appearance and its nearly equal shrinking in all directions, it or its quarterings are suitable for many of the productions of the turner. If the trunk be sliced obliquely, the slabs thus obtained have neither the strength of the longitudinal piece nor the regular figures of the transverse; but however wasteful in general, such pieces thinly divided are often very suitable for ornamenting the surface of other woods in the manner known as veneering. Of the longitudinal cuts, that through the heart of the tree is at once the hardest and the most diversified by the lengthwise and transverse markings; and a cut in the radial direction, as displaying the surfaces and color of the medullary plates, is usually more ornamental than that in a tangential direction, in which the cut ends of them can scarcely be visible. In the growth of a tree, all the principal branches which are at a later stage found upon it, and indeed many which prove abortive or perish, would appear to have their origin at a very early period; hence, the knots, which consist each of that portion of a branch which is within the trunk or a larger branch, and also of the deflected and condensed fibres of the latter that are turned out of their course by the former, spring usually from the pith of the part they are in, or very near to it, and extend out through the whole semi-diameter of such part to its surface; while also, and more frequently in some woods than in others, there will be a considerable number of such knots which present themselves in the wood, though no corresponding branches at the time appear. Such knots thus have usually a middle portion in which the fibres run nearly straight, but about this portions in which the new fibres confusedly originate, or the longitudinal fibres of the part are bent about the middle portion, parting below and meeting again above it. The result is a considerable disturbance in the regularity of the texture, which must appear in a section made in any direction through the knot. The angle at which the knot will make its way through the wood may vary greatly, its course being, in the cypress, oak, and some pines, nearly horizontal; in the poplar, almost vertical; and in most trees, at some angle intermediate. It is a singular circumstance that into and directly about the knots of a tree the incrusting matters peculiar to it are always most abundantly deposited; a fact illustrated in the value set upon pine knots in new countries for purposes of illumination, arising in part from the large amount of resin filling them. In part also their value arises from another peculiarity in the structure of knots, namely, that in them the fibres, not only the straight, but also the surrounding bent ones, are greatly compacted and condensed; hence, knots are denser and harder than the wood they are in, sometimes, as in pine, in an extreme ratio, so that they are cut with difficulty, and burn slowly. The greater density of the knot, so far as the fibres are concerned, appears due to the fact of its having to form under and against the pressure of the surrounding wood, the fibres of which do not readily elongate to make room for it, and thus pack its substance, while saving the symmetry of the tree. A result of the greater deposit of extraneous materials about the fibres is that generally the knots are also of a deeper or more marked color than the wood. It has been supposed that the longitudinal core of the knots, or that part continuous with the fibres of the branch, must in some woods, as the pine, grow away from the surrounding fibres in such a way as to become nearly detached from, though within them; and in this manner has been explained the tendency of those knots to fall out of the seasoned wood, when exposed in cutting. From the direction of cutting, if sliced across, knots will usually show an elliptical figure. On large trees they may be found of enormous size, as from 4 to 6 inches in diameter, and 2 feet or more in length. Between the forkings of a tree, or in the angle between a stem and large and nearly vertical branch, there often occurs a filling in, as it were, of variously contorted and compressed fibres, forming what is called a curl; these in some woods, as mahogany, are frequent, large, and beautiful, and they are properly appreciated for ornamental use. Somewhat similar structures, though of different external form, and known as burrs or gnarls, may originate upon the stems, roots, or branches of certain trees, the derangement of the fibres being set up by the puncture of insects or by other causes, and the formation growing like an excrescence, often to a large size. Some of these excrescences appear to arise by a sort of unsuccessful attempt at the formation of several branches close together; and this is evidently the case with the wood formed at the top of the pollard trees, or those cut off above, as elms, willows, and others are sometimes served. When a burr produced in any of these ways is of large size, its wood is often highly ornamental also, and it is then correspondingly prized, being cut into thin veneers for cabinet work. A peculiar small curl, occurring thickly interspersed through the proper wood of a tree, has been named the "bird's-eye;" in its perfection this probably appears in but a single tree, a species of American maple, hence known as "bird's-eye maple." In finished work, this shows the appearance of numerous small dots or ridges, or of conical projections with a small hollow in the centre. An examination of the bark of this tree shows it studded with corresponding small and hard eminences, like short and blunt internal spines;

these, indenting the wood and moulding each successive annual ring, appear to cause the slight deviations or curls, which therefore follow them through the whole thickness of the wood, and which, when the latter is cut and planed, afford the pleasing effect now considered. The somewhat similar markings of the wood of the *kiabocca*, from Singapore, the yew, and some other species, are really different, being due to the effect of small or partially formed knots within the wood. It is probable that the circular markings of certain woods, as the satin wood, the sycamore, and in some cases also mahogany, ash, elm, &c., and which in the worked piece resemble undulations, or the ripple marks on sand, are usually due to a cause similar to that operating in the bird's-eye maple—in this case to circular ridges, instead of spines, upon the internal surface of the bark. The variations in the grain and appearance of wood, due to intermixture of fibres or of tints, and to curls, knots, &c., exist to such a degree that the cabinet maker rarely or never expects exactly to match different pieces of ornamental wood in work that he may be constructing, unless it be in the single case of turning the two faces produced by the same cut in veneering opposite each other; otherwise, the most that is practicable is a near approach to similarity of figures, or such a gradation of them as is afforded by successive veneers from the same block.—The ornamental colors in woods are either single and nearly uniform, as in the red cherry; or such as show different tints of the same hue, as in black walnut, and more markedly in mahogany; or such as present 2 or 3 different hues, as in some of those to be named. Thus, in a transverse section of the East Indian tulip wood, king wood, zebra wood, or rosewood, stripes of different colors, of irregular form and extent, are observed running around the centre; in lengthwise planks, these markings appear as stripes, bands, or patches, and sometimes in the form of mottled, dappled, or wavy figures of grotesque character. Woods variegated in grain and color, as the kiabocca (Amboyna), king wood, some specimens of mahogany, maple, satin wood, snake wood, and zebra wood, are more generally employed for work to be finished with a mainly smooth surface, such as cabinet work, vases, and plain turning, than for carved work, or that presenting frequent and sudden changes of outline. In the latter, the variations of the hues and figure of the wood only serve to distract attention from the form of the work itself, and so injure the effect; but upon plainer surfaces, the markings in the wood are observed with pleasure, constituting themselves the ornament. On the same principle, mosaics and all inlaid work are suited only to smooth surfaces; and for carving, or cutting in peculiar patterns (see TURNING), the even-colored woods are chosen. The colors of most woods, contrary to the rule holding in respect to colors of almost all other substances, by exposure to light become rapidly or very gradually darker. Tulip wood alone is said to fade. In some instances, as with mahogany, this change goes on for years, and the dark, rich hue finally attained differs greatly from the light cast of the fresh-cut wood. When first laid on, the oil or varnish applied to furniture also darkens it; but though it retards, it does not prevent the subsequent deepening of color of the wood itself. Common yellow varnishes injure the colors of the lighter woods, for which the most colorless varnish should be selected. Wood recently worked may be made to resemble that darkened by age, by washing it with lime water; or more effectually, by allowing it to lie in lime water from a few minutes to some days, as may be required. The color of some woods is heightened before varnishing by staining them, or the color may be applied with the varnish; in such ways, birch or even whitewood may by adroit staining be made to pass with all but good judges for mahogany. In case of the mainly straight-grained woods, as pine and mahogany, when properly seasoned, the shrinking or contraction that is certain to follow in some degree after working will usually cause no perceptible distortion of the general form of the article produced; but since in all cases the shrinking is mainly lateral in reference to the course of the fibres, and so must accompany their course however tortuous it may be, it follows that in the more highly irregular and ornamental woods, the contraction, occurring in many different paths and directions, is more liable to result in disturbance of the original shape, or even in splitting and breaking up of smooth surfaces. The economy practised with the more costly woods, however, only a thin veneer of these being glued upon a firm fabric of straight-grained wood, serves in good degree to prevent the mischief here referred to.—The subject of the relations of certain physical properties of wood to its structure has been investigated by Savart, Tyndall, Knoblauch, and others. Professor Tyndall finds that all woods conduct heat most readily in the direction of the grain; least readily in the direction that is at right angles to the grain and also tangential to the rings; and at an intermediate rate in the direction at right angles to the grain and radial in reference to the trunk. Savart had previously shown the like differences in respect to the sonorousness or resonance of wood, in the three directions named; and Tyndall further concludes that these three unequal axes of physical effect are identical, not only for conduction of heat and resonance, but also for the cohesion of the wood, its elasticity, and its permeability to liquids. Obvious practical applications of these principles are seen in the universal practice of splitting the staves for casks and barrels in a nearly radial direction from the log, so that the axis of least permeability, the tangent to the rings, shall point through them, and their power to transfer the liquids from within to the air shall be the least possible; and also in the preference given, aided here by convenience of working also, to the lengthwise direction of fibres in the construction of musical instruments, as flutes and the sounding boards of violins and pianos. Professor Knoblauch has recently investigated more particularly these structural relations of the woods generally to the physical properties considered above, determining the effects in two directions only, namely, along and across the grain; and the result is that he finds the large number of woods experimented on by him to be reducible to four groups, in which the ratios of the two axes named are for heat conduction, respectively, 1 : 1.25; 1 : 1.45; 1 : 1.5; and 1 : 1.8. Of the first group, box and lignum vitæ are examples; of the second, beech, elm, oak, ash, maple, mahogany, pear, and plum; of the third, apricot and Siberian acacia; of the fourth, willow, chestnut, pine, and ironwood. It must be understood, however, that the classification refers only to the one or two species of each genus examined, the results possibly differing for other species.—Wood is sometimes moulded into embossed surfaces by heating and then forcing it into a suitable mould by a powerful screw press, leaving it to cool. Certain woods are imitated also, and obtained in a plastic form, by mixing their fine saw dust with glue or other cementitious matter, and pressing the mixture into the desired shapes in moulds. Other factitious woods have been formed by mixing saw dust with bullocks' blood and compressing—a composition devised by M. Ladry. A product termed durable wood (*bois duré*), recently invented in France, is attracting some attention in that country and England. It is made of saw dust alone, heated to a high temperature, and in such state subjected to enormous pressure—600 tons, it appears, to the square foot; and it thus acquires a compactness and hardness exceeding those of wood. It is of very fine texture, moulds readily in the forming stage into shapes difficult of production by carving, and is unchangeable by the atmosphere. It is now made into writing desks, inkstands, and medallions, and even employed for the binding of books. Beside the convenience of their plasticity, all such factitious woods will have a sort of beauty peculiar to themselves; but this will be in the way of sober and well nigh uniform color and effect, such as could be obtained by almost any composition of like hue; so that these products must lack the value of rarity, and also that due to the presence and peculiarities of the proper woody fibre.—The following list presents in connection the better known woods which are most valuable for the properties, usual or peculiar, named at their heads respectively:

Elasticity.—Ash, hazel, hickory, lancewood, chestnut (small), snake wood, yew.

Elasticity and toughness.—Beech, elm, lignum vitæ, oak, walnut, hornbeam.

Even grain (for carving or engraving).—Pear, pine, box, lime tree.

Durability (in dry works).—Cedar, oak, poplar, yellow pine, chestnut.

Coloring matters.—Red: Brazil, braziletto, camwood, logwood, Nicaragua, red sanders, sapan wood. Green: Green ebony. Yellow: Fustic, Zante.

Scent.—Camphor wood, cedar, rosewood, sandal wood, satin wood, sassafras.

—The following list presents connectedly the woods in most common use for the purposes named:

Building.—Ship building: Cedars, pines (deals), firs, larches, elms, oaks, locust, teak. Wet constructions (as piles, foundations, flumes, &c.): Elm, alder, beech, oak, plane tree, white cedar. House carpentry: Pines, oak, whitewood, chestnut, ash, spruce, sycamore.

Machinery and millwork.—Frames: Ash, beech, birch, pines, elm, mahogany, oak. Rollers, &c.: Box, lignum vitæ, mahogany, service tree. Teeth of wheels: Crab tree, hornbeam, locust, service tree. Foundery patterns: Alder, pines, mahogany.

Furniture.—Common: Beech, birch, cedars, cherry, pines, whitewood. Best furniture: Amboyna, black ebony, cherry, mahogany, maple, oak, rosewood, satin wood, sandal wood, chestnut, cedar, tulip wood, walnut, zebra wood, ebony.

Turnery.—A very great variety, some of which are named under TURNING.

It should be mentioned also that the chestnut and locust are particularly valued for posts and rails; the ash for the making of oars; walnut for gun stocks; and box and mountain ash for turning into wind instruments, as the flute and clarinet.—Beside the trees specially referred to in the course of this article, see also others under their respective titles; and for related subjects, see ARBORICULTURE, and FUEL. For a specific and complete alphabetical list of the woods commonly employed in the mechanical and ornamental arts, see "Appleton's Dictionary of Machines," &c. (New York, 1857).

WOOD. I. A N. W. co. of Va., separated from Ohio by the Ohio river, and drained by the Little Kanawha; area, about 400 sq. m.; pop. in 1860, 11,046, of whom 176 were slaves. The surface is hilly and the soil fertile. The productions in 1850 were 18,790 bushels of wheat, 251,715 of Indian corn, 59,584 of oats, 73,885 lbs. of butter, 53,170 of tobacco, 23,855 of wool, and 3,166 tons of hay. There were 10 grist mills, 8 saw mills, 2 iron founderies, 22 churches, and 293 pupils attending public schools. Iron ore and bituminous coal are found. The county is intersected by the northwestern Virginia railroad. The value of real estate in 1856 was $2,459,725, an increase of 42 per cent. since 1850. Capital, Parkersburg. II. A N. E. co. of Texas, formed since 1850, bounded S. E. by the Sabine river; area, 1,040 sq. m.; pop. in 1860, 4,968, of whom 1,005 were slaves. The surface is undulating or level, and diversified by prairie and woodland, and the soil is very fertile. Capital, Quitman. III. A N. W. co. of Ohio, bounded N. W. by the Maumee river, and drained by the Portage and its branches; area, 590 sq. m.; pop. in 1860, 9,157. The surface is level, in some places swampy, and the soil is very fertile. A heavy growth of timber covers a large portion of the county. The productions in 1850 were 36,933 bushels of wheat, 171,285 of Indian corn, 55,122 of oats, and 158,345 lbs. of butter. There were 10 churches, 2 newspaper offices, and 2,526 pupils attending public schools. The county is intersected by both divisions of the Cleveland and Toledo railroad, and by the Dayton and Michigan railroad. Capital, Perrysburg. IV. A new central co. of Wis., drained by the Wisconsin and Yellow rivers and their branches; area, about 600 sq. m.; pop. in 1860, 2,429. The surface is undulating and the soil fertile.

WOOD, Anthony à, an English antiquary, born in Oxford, Dec. 17, 1632, died Nov. 29, 1695. He was educated at Merton college, Oxford, and took the degree of A.M. in 1655. About the same time he began to transcribe the monumental inscriptions and arms in the parish churches and college chapels of the city and university of Oxford, which led to his "History and Antiquities of Oxford." The copyright of this work was sold to the university for £100, and it was published, translated into Latin, in 1674. Wood is still better known by his "Athenæ Oxonienses, an exact History of all the Writers and Bishops who have had their Education in the University of Oxford, from 1500 to 1695, to which are added the Fasti or Annals of the said University" (fol., London, 1691), which has been greatly improved by Dr. Bliss (4 vols. 4to., 1813–'20). Shortly after this work was published Wood was prosecuted in the vice-chancellor's court of the university for some remarks in his book on the earl of Clarendon, and received a sentence of expulsion.

WOOD, Sir Charles, an English statesman, born in Pontefract, Dec. 20, 1800. He was graduated at Oriel college, Oxford, in 1821, and in 1826 entered parliament for the borough of Great Grimsby. Having for several years acted as private secretary to Earl Grey, he was in 1832 appointed secretary to the treasury, and in 1835 secretary to the admiralty, which latter office he held until 1839. He remained out of office until the accession of the Russell ministry in 1846, when he was appointed chancellor of the exchequer. He retired with his colleagues in Feb. 1852, and in December of that year was appointed president of the board of control, which office he administered until Feb. 1855. From March, 1855, to Feb. 1858, he was first lord of the admiralty; and upon the return of Lord Palmerston to power in 1859 he became secretary of state for India, which office he still retains. Since 1832 he has sat in parliament for Halifax.

WOOD, Robert, a British archæologist, born at Riverstown, county Meath, Ireland, in 1716, died at Putney, Sept. 9, 1771. He was educated at Oxford, visited Italy repeatedly, made the tour of Asia Minor and Syria in 1750, in company with his friends Bouverie and Dawkins, and an Italian architect named Borra as a draughtsman, and published as the fruit of the expedition "The Ruins of Palmyra" (fol., 1753, with 57 plates), and "The Ruins of Balbeck" (fol., 1747, with 47 plates). In 1759 he was appointed by Lord Chatham under secretary of state, and retained that place through the administrations of Lord Bute and Mr. Grenville, going out with the latter minister in 1765. His "Essay on the original Genius and Writings of Homer" (4to., London, 1775) was published posthumously.

WOOD DUCK, or Summer Duck (*aix sponsa*, Boie), the most beautiful of the American birds of this family. The bill is very high at the base, shorter than the head, the upper lateral angle running back much behind the lower edge; nostrils very large, the feathers of the forehead reaching to their posterior edge; nail very large and much hooked, occupying the entire tip; head crested; tail about half the length of the wings, wedge-shaped, truncated at the tip, the coverts nearly as long as the feathers. It is impossible to convey in words a complete idea of the plumage of this bird; the principal characters are: head and crest metallic green, glossed on the sides with purple; line from upper corner of bill, one behind eyes, 2 bars on side of head meeting under the chin, and upper throat, white; lower neck and sides of tail purple, the former with triangular spots of white; lower parts white; sides yellowish banded with black and posteriorly with white; speculum bluish green, tipped with white; primaries silver white externally at tip; back uniform, with bronzed and green reflections; a white crescent in front of wings bordered with black; scapulars and inner tertials velvet black with violet gloss; in the female the back is more purplish, the sides of head and neck ashy, about the bill white, and lower neck brownish; the eyes are red; it is 19 inches long, and 29½ in alar extent. It is distributed over North America as far as the British provinces, confined to fresh water, especially secluded ponds in woods; the flight is noiseless, very rapid, graceful, and as easy among the branches of trees as that of the wild pigeon; flocks of 50 are often seen. It breeds from April to June, according to latitude, the nest being made in the hollow or broken portion of a tree, as in the deserted excavations of the woodpecker or squirrel, and usually in deep swamps; the eggs are 6 to 15, 2 by 1½ inches, pale buff and greenish, smooth, and laid on dried plants and feathers; they are much attached to their breeding places, and the young run and swim as soon as hatched, feeding on aquatic insects, flies, and seeds; the adults are excellent divers, and feed on acorns, nuts, grapes, berries, rice, insects, snails, tadpoles, and small fry; the flesh is best in autumn. The sense of hearing is very acute, rendering the bird rather shy. The chief enemies of the adults are minks, raccoons, and snakes, and many of the young are destroyed by snapping turtles, alligators, and predaceous fishes. It might be domesticated with a little care.—The only other species is the famous mandarin duck of China (*A. galericulata*, Boie), which is very handsome and highly prized, resembling the former, especially the females, with some of the quills enlarged and standing vertically when the wings are closed.

WOOD ENGRAVING. See ENGRAVING.

WOOD IBIS (*tantalus loculator*, Linn.), a bird belonging, together with the white and glossy ibis (see IBIS), to the family *tantalidæ*, one of the *grallatores*. The genus *tantalus* has the very long bill much thickened at the base and curved downward at the tip; the nasal groove not continued beyond the nostrils, which are broad, pervious, and not surrounded by membrane; the head and neck entirely bare, the skin of the latter transversely rugose; the tibia more than half bare, and covered as well as the tarsus with hexagonal scales; the toes connected at the base by a membrane, and the outer lateral toe longer than the inner. The wood ibis is the only representative of the genus in the United States. It is a showy bird, mainly of a white color, the tail and quills of the wings being dark metallic green, and the face and head greenish blue; its total length is about 3½ feet, and the spread of its wings as much as 5 feet; the bill, of a brownish horn color, and considerably curved toward the tip, is nearly 9 inches long, and at its base, where it rises high in the head, is 2 inches thick. They inhabit the southern states, and breed in immense numbers, making their nests upon the tops of trees in cypress swamps, apparently preferring those which grow in the water at the margins of lakes and ponds, as being least accessible from the land; their breeding places are used for several years, and their deep nests made of small twigs lined neatly with the southern *tillandsia;* they lay 3 eggs of a whitish color, nearly 2½ by a little more than 1½ inches; the young are hatched in April. They do not generally move about in flocks, but commonly either singly or in pairs, feeding upon small fish, crawfish, and young alligators; they are rather shy birds, the signal croak and circling flight speedily betokening their alarm at the approach of the invaders of their solitude.

WOOD MOUSE. See MOUSE.

WOOD RAT. See RAT.

WOOD SORREL. See SORREL.

WOODBINE. See HONEYSUCKLE.

WOODBRIDGE, TIMOTHY. See BLIND, vol. iii. p. 358.

WOODBRIDGE, WILLIAM CHANNING, an American writer on education, born in Medford, Mass., Dec. 18, 1794, died in Boston, Nov. 9, 1845. He was graduated at Yale college in his 17th year, and at 18 became principal of Burlington academy, N. J., where he remained till 1814. He then studied medicine and theology till Dec. 1817, when he became one of the instructors in the American asylum for the deaf and dumb at Hartford, Conn. He remained there for 3 years, and in the mean time was licensed to preach by the Congregational consociation. He visited Europe 3 times, and on his return from his second journey (1829), which had occupied 4 years, devoted himself to the work of elevating the condition of the common schools, and introducing the Pestalozzian system of instruction as modified by Fellenberg, and by his own observations. In Aug. 1831, he purchased the "American Journal of Education," changed its name to "The Annals of Education," and made it the medium for the promulgation of his educational views, and continued to publish it till 1838. He contributed to the "Encyclopædia Americana;" published "Letters from Hofwyl," giving an account of Fellenberg's system, and several elementary works illustrative of the Pestalozzian method of instruction; and in conjunction with Mrs. Emma Willard prepared, after a plan of his own, a school geography and a larger work on universal geography.

WOODBURY, a W. co. of Iowa, bounded W. by the Missouri and Sioux rivers, which separate it from Nebraska; area, about 600 sq. m.; pop. in 1860, 1,119. The surface is undulating and the soil generally fertile. The productions in 1859 were 46,275 bushels of Indian corn, 1,683 of oats, 10,070 of potatoes, 9,910 lbs. of butter, and 1,245 tons of hay. Capital, Sioux City.

WOODBURY, LEVI, an American jurist and statesman, born in Francestown, N. H., Dec. 22, 1789, died in Portsmouth, Sept. 7, 1851. He was graduated at Dartmouth college in 1809, studied law in the law school at Litchfield, Conn., at Boston and Exeter, was admitted to the bar in 1812, and practised his profession at Francestown till 1816, when he was elected clerk of the state senate. In 1817 he was appointed a judge of the superior court, and in 1819 he removed his residence from Francestown to Portsmouth. In 1823 he was elected governor of New Hampshire, and at the close of his term of office resumed the practice of the law at Portsmouth. In 1825 he was chosen to represent that town in the legislature of the state, and became speaker of the house of representatives. The same legislature elected him a United States senator, which office he filled till 1831. On the expiration of his term of service in the federal senate he was returned in March, 1831, by the people of the Portsmouth district to the state senate, but declined the office in order to accept that of secretary of the navy, to which he had been appointed by President Jackson on the breaking up of his first cabinet and the retirement from the administration of the friends of Mr. Calhoun. In July, 1834, he was transferred to the office of secretary of the treasury, which he retained during the remainder of President Jackson's second term of office and the whole of Mr. Van Buren's administration, going out on the inauguration of President Harrison, March 4, 1841. During this period the post of chief justice of the superior court of New Hampshire was offered him, but was refused. In 1841 he was again returned to the United States senate by the legislature of his native state, and as a member of that body voted in 1841 against the repeal of the sub-treasury act, against the bankrupt law, against the bill distributing among the states the surplus revenue derived from the public lands, and against the bill to give the widow of President Harrison $25,000; in 1842 he voted against the increase of the navy, and in favor of refunding the fine paid by Gen. Jackson at New Orleans; in 1844 in favor of the treaty annexing Texas, in favor of the notice for ceasing the joint occupation with Great Britain of the territory of Oregon, and in favor of the admission of Texas by joint resolution of the two houses of congress. Mr. Woodbury continued a member of the senate till Sept. 1845, when President Polk appointed him a justice of the U. S. supreme court, in place of Judge Story, deceased. The office of minister to England, which the same president had desired him to accept soon after his inauguration a few months previous, he had declined. He remained upon the bench of the supreme court until his death. Throughout his public life he was an influential member and leader of the democratic party, and at the time of his death was looked upon as likely to be selected as its candidate for the presidency. He published a volume of law reports, in connection with Judge Richardson of New Hampshire, and a collection of his "Political, Judicial, and Literary Writings" appeared in 1852 (3 vols. 8vo., Boston). He received the degree of LL.D. from the Wesleyan university at Middletown, Conn., and from Dartmouth college.

WOODCHUCK, the common name of an American rodent (*arctomys monax*, Gmel.), the generic characters of which have been given under MARMOT. It is 15 to 18 inches long, the color varying from blackish to grizzled above, and chestnut red below; the feet are always dark, and the tail blackish, sometimes with grayish rings. The form is thick and clumsy, neck hardly apparent, head broad and flat, legs short and thick, and tail short and bushy; the nose is wide, lips full and fleshy, eyes small, and ears short; feet large, and naked below; hair rather soft, and whiskers long and stout; there are rudimentary cheek pouches; stomach simple, and cæcum large; there are glands just within the rectum, which secrete a slightly offensive substance. It is found from Hudson's bay to South Carolina, and west to the neighborhood of the Rocky mountains. From its voracity and burrowing habits it is often called the ground hog; it digs deep holes in the fields, on sides of hills, or under rocks in the woods, in a slanting direction, at first upward to keep out the water, with several compartments, and usually with more than one entrance; it passes the winter in the burrow, in a lethargic state; the digging is effected by the powerful fore feet, assisted by the teeth, the dirt being thrown backward under the belly and then kicked out by the wide-spreading hind feet. The food consists of various plants, fruits, and vegetables; they are especially fond of red clover, often doing great mischief to this crop; they frequently make their incursions at midday, posting sentinels to warn them of danger by a shrill whistle; they are very vigilant, and their sense of hearing is remarkably acute; they are very cleanly in habit. They are easily tamed and docile, eating bread, milk, and vegetables, and refusing animal food; they have 5 or 6 young at a birth; they fight boldly, and are more than a match for a dog of equal size; the flesh is rank, but is sometimes eaten.

WOODCOCK, a favorite game bird of the snipe family. The American woodcock (*philohela minor*, Gray) is 11 inches long and 17 in alar extent; the body is stout, and the head, bill, and eyes very large; the last are placed very far back, giving the bird a singularly stupid look; the tibiæ are short and feathered to the joint, and the toes cleft to the base; wings short and rounded, with the first 3 primaries much attenuated, and the 4th and 5th equal and longest; tarsi stout, and nail of hind toe very short; bill 2½ inches long, the upper mandible the longest; tail short. The upper parts are variegated with pale ashy, yellowish rufous of various shades, and black; on the hind head are 3 transverse black bands, alternating with 3 others of pale yellowish rufous; a brownish black line from the eyes to bill, and one below the eyes; lower parts pale rufous, brightest on the sides. It is found all over eastern North America; it is nocturnal in habit, as the large eyes would indicate, keeping quiet by day unless disturbed by sportsmen; it frequents fresh water marshes and the margins of streams, probing the mud and turning over the leaves in search of earth worms and larvæ with great skill and celerity. The sense of sight is very acute; from the rapidity and irregularity of its flight it is difficult for an inexperienced marksman to kill it; it is a great favorite with epicures, and is generally served with the entrails in. They pair in spring, making a nest of dried leaves and grasses, in the woods, at the foot of a bush or fallen tree; the eggs are 4 or 5, 1¾ by 1⅛ inches, dull yellowish clay-colored, with numerous patches of purplish brown; the young run as soon as hatched. They are gentle in captivity, and will eat moistened meal, bits of cheese, and similar food.—The European woodcock (*scolopax rusticola*, Linn.), *la bécasse* of the French, found all over Europe, in N. Asia, and in Japan, is about 14 inches long, with long wings, the first primary being the longest; the plumage is like the American, being variously mottled with yellowish and ruddy brownish black and gray, recalling that of the goatsucker; the head is grayish in front, yellowish brown with transverse darker brown streaks behind. It is found in dry and high ground in summer, and in the woods and swamps in the autumn, when it is generally seen singly or in pairs, especially in dull weather; the food and habits are the same as in the American species.

WOODFALL, WILLIAM, an English newspaper reporter, born in London about 1745, died there, Aug. 1, 1803. He was the younger brother of Henry Sampson Woodfall, by whom the "Public Advertiser" newspaper was conducted when the letters of Junius were published in it. He was bred a printer, became an actor for a short time, and was then editor in succession of the "London Packet," the "Morning Chronicle," and the "Diary," which last journal he established in 1789. In this paper he introduced the practice of publishing daily long reports of the parliamentary proceedings of the previous day. He himself sometimes wrote these reports from memory, and without aid from notes or from an amanuensis, to the extent of 20 columns of the paper. When other newspapers, employing several reporters, began to compete with him, he abandoned the publication.

WOODFORD. I. A N. co. of Ky., bounded W. by the Kentucky river; area, about 250 sq. m.; pop. in 1860, 11,220, of whom 5,829 were slaves. The surface is undulating and the soil very fertile. The productions in 1850 were 812,490 bushels of Indian corn, 112,430 of oats, 2,958 tons of hemp, and 45,586 lbs. of wool. There were 18 grist mills, 14 saw mills, 23 churches, and 689 pupils attending schools. Limestone abounds, and there are many forests of valuable timber. The county is intersected by the Lexington and Frankfort railroad. Capital, Versailles. II. A central co. of Ill., bounded W. by Peoria lake; area, 470 sq. m.; pop. in 1850, 4,415; in 1860, 13,282. The surface is undulating, diversified by prairie and woodland, and the soil is highly fertile. The productions in 1850 were 76,770 bushels of wheat, 404,244 of Indian corn, 50,727 of oats, 79,664 lbs. of butter, and 4,553 tons of hay. There were 5 churches, and 750 pupils in public schools. The county is intersected by the Illinois central railroad. Capital, Metamora.

WOODHOUSE, Robert, an English mathematician, born in Norwich, April 28, 1773, died in London, Oct. 23, 1827. He was graduated at Cambridge in 1795, became a fellow of his college, was chosen Lucasian professor of mathematics in 1820, in 1822 became Plumian professor of astronomy and experimental philosophy, and in 1824 superintendent of the observatory at Cambridge. He published valuable works on analytical calculation, trigonometry, isoperimetrical problems and the calculus of variations, and on astronomy.

WOODHOUSELEE, Lord. See Tytler, Alexander Fraser.

WOODPECKER, the common name of the very numerous scansorial or climbing birds of the family *picidæ*. The bill is long, straight, and wedge-shaped, with flattened and truncated tip, and sides more or less ridged, admirably adapted for pecking holes in trees in search of insects and larvæ; the toes are 2 before and 2 behind, with strong sharp claws, enabling them to run upon the branches of trees in every direction with great facility; the cervical vertebræ are 12, and greatly developed, the caudal usually 7, the last one very large and with a strong, ridge-like spinous process; the sternum has 2 excisions at the posterior margin on each side. The tongue has the horns of the hyoid bone greatly elongated posteriorly, extending around the back and over the top of the head, the anterior ends, enveloped in a sheath in which they freely move, being attached in advance of the eyes, usually near the opening of the right nostril; these slender bows are accompanied by slips of muscle by whose contraction they are shortened, thrusting the tongue out far beyond the bill; another pair of muscles, folded around the upper part of the trachea and going forward to the anterior part of the tongue, draw the organ in again; its surface is covered with a glutinous matter secreted by 2 large glands, whose ducts open near the point of the lower jaw, and furnish a fresh supply every time the tongue is drawn in; the tip is also horny, with several barbed filaments pointing backward to retain insects too large to be captured by the viscid secretion. They are very active birds, living in woods and forests, continually tapping with the bill the surface of trees to discover soft and rotten places, in which are lurking the insects and the larvæ on which they principally feed, and which they obtain by digging with great energy; their motions on the trees are greatly assisted by the stiff tail, which has the feathers pointed at the end, where they are usually much worn; they eat also fruits and seeds. They are generally solitary birds, and remarkably silent, the principal noise they make being produced by striking the bill against the trees; it is a mistake to suppose they injure trees, as their common name of sapsucker indicates, as they are in search of destructive insects and not the juice of the trees, and do much more good than harm. They roost and nest in holes of trees, preferring to enlarge a natural one for the purpose, and carrying away most of the chips to a distance; the eggs are 4 to 8, pure white, and deposited upon a few chips at the bottom of the hole. Their colors are generally strongly contrasted, black and white, or green and yellow, with red marks about the head. The family is connected with the cuckoos by the wryneck. (See Wryneck.)—The *picinæ* are the typical group of woodpeckers, and are very generally distributed over the earth, though most abundantly in warm regions. Among the hundreds of species, only a few of the most common American ones can be described here. One of these is the hairy woodpecker (*picus villosus*, Linn.), 8 or 9 inches long and 15 in alar extent, black above with white band down the middle of back; larger wing coverts and quills with conspicuous spots of white, and 2 white stripes on each side of head; lower parts white; in the male there is a scarlet nuchal crest, covering the white; the hyoid bones curve around the right eye to its posterior angle. It is found throughout North America to the eastern base of the Rocky mountains, other species occurring on the western slope; it is a lively, noisy, and fearless bird, met with at all seasons in orchards, woods, and fields, even in the midst of cities; in winter it visits the farm yards to glean among the leavings of the cattle; like other species it clings when shot to the branches, even after death; the flight is short and rapid, the notes loud and sharp, and the plumage very soft and full, especially in northern regions; it is found all winter in the woods about Lake Superior; berries form a portion of its food. The downy woodpecker (*P. pubescens*, Linn.) is a miniature of the last, being 6¼ inches in length and 12 in alar extent; it has the same habits and distribution, and like it bears the common name of sapsucker.—The ivory-billed woodpecker (*campephilus principalis*, Gray) is about 21 inches long and 30 in alar extent; the prevailing color is black, glossed with bluish above and greenish below; stripe on side of neck and at base of bill, under wing coverts, parts of secondaries, and inner primaries, white; the crest in the male scarlet; primaries 10, the first very short; tail feathers 12, exterior very small and concealed; tarsi covered anteriorly with large plates. It is found in the southern states, Mexico, and Brazil, inhabiting the lonely forests and dismal swamps, uttering loud notes, "pait, pait, pait," like the high tones of a clarinet, especially in early morning and while preparing the nest; it is called *carpentero* by the Spaniards from the great quantity of chips it makes; the Indians value the ivory-like bill and the scarlet crest, as ornaments for head dresses and pouches. It begins to prepare its nest early in March, high on a tree, digging a cavity under some protecting branch, from 12 to 30 inches deep and 7 wide inside, both sexes working at it; it prefers the tops of the highest trees for its feeding places, though it will eat grapes, persimmons, and berries; it does not attack corn and fruits like some other species; its flight is sweeping and very graceful. The *C. imperialis* (Gray), an allied species from Central America, is larger, with no white stripe on the neck.—The black woodpecker or log cock (*dryotomus* [*hylatomus*] *pileatus*, Bonap.) is 18 inches long and 29 in alar extent, with bill bluish black; general color dull greenish black; a narrow white streak from over eyes to hind head, and a wider one from under eyes along neck; crown, crest, and patch on cheeks scarlet; under wings and chin white, tinged with sulphur yellow; in the female there is no red on the cheeks, and the anterior half of the head is black. This is the largest species in the northern states, and is found throughout North America from the Atlantic to the Pacific.—The three-toed woodpecker (*picoides arcticus*, Baird) has no inner hind toe and a very flat bill, and, like most of the other species, is black above and white below, with a square yellowish patch on the crown and the sides banded transversely with black; it is 9½ inches long and 16 in alar extent; the female has no yellow on the head. It is found from the northern states to the arctic regions, and from the Atlantic to the Pacific; species occur in the northern parts of both hemispheres, preferring generally forests of pines and spruces.—The *melanerpinæ* or black woodpeckers are all American, and have the bill slightly curved. The red-headed woodpecker (*melanerpes erythrocephalus*, Swains.) is 9¾ inches long and 17½ in alar extent; it is bluish black, with head and neck all round crimson red, margined with a narrow crescent of black on upper breast; lower parts, rump, and broad band across wings, white. It is found over North America from the Atlantic to the Rocky mountains; it is a very gay and frolicksome bird, fond of cherries, strawberries, and other ripe fruits, and young juicy corn, and so destructive to the latter that in many places a price is set upon its head; it also eats insects and larvæ, and sucks the eggs of small birds; it hops well on the ground, and dodges skilfully around a tree when approached; great numbers are sometimes seen on a single fruit tree. On alighting it stops a few moments listening and motionless; if it perceives nothing, it taps smartly with the bill and listens again, placing the head close to the tree, in this way detecting the least motion of insect or larva, and instantly digging it out. The flesh is tough, and smells so strongly of ants and other insects as to be scarcely eatable; by the incalculable number of insects it devours it more than compensates for the mischief done in garden, orchard, and field. The red-bellied woodpecker (*centurus Carolinus*, Bonap.) is 9¾ inches long and 17½ in alar extent; it is banded above transversely black and white; rump white; nape, crown, behind ears, and middle of belly, red; forehead white, tinged with red; under parts brownish white; in the female the crown is ashy and the forehead pale red. It is found in North America from the Atlantic to the Rocky mountains.—In the *colaptinæ* or ground woodpeckers, of which there are none in Europe, the bill has very slight lateral ridges; they are found very frequently on the ground, obtaining their food among ants' nests and the dung of animals; they also alight in trees, in the hollows of which they nest; fruit and corn form a part of their food. The flicker, yellow-shafted, or pigeon woodpecker (*colaptes auratus*, Swains.) is 12½ inches long and 19½ in alar extent; it is also called high-holder. The color above is light olivaceous brown with a slight green tinge, each feather with a crescentic band of black near the end; head and upper neck bluish ash, with black patch on each side of cheek and red crescent on nape; throat pale lilac brown; crescentic patch on breast and rounded spots on belly black; shafts and under surface of wings and tail yellow; below yellowish or brownish white; bill slightly curved; the female has no black cheek patches. It is found in eastern North America to the Rocky mountains; it is very lively even in confinement, and then a great defacer of furniture; the flight is strong, with numerous beats of the wings; it is called flicker from its note; its flesh is often eaten in the middle states. Raccoons and black snakes are its greatest enemies, the former putting the fore paws into the nest and drawing out eggs and young, and the snake entering completely, as mischievous boys have sometimes found to their surprise and terror when robbing this bird's nest; hawks often attack it when on the wing, but it generally escapes by diving into its hole or dodging round the tree till it can enter it. The red-shafted woodpecker (*C. Mexicanus*, Swains.) has the shafts and lower parts of wings and tail orange red, a red patch on cheek, nape without red crescent, and back glossed with purplish brown. It is found in western North America from the Black hills to the Pacific. On the upper Missouri there is a hybrid between these two birds, having the shafts intermediate between yellow and dark orange red, a red nuchal crescent, ash-colored throat, and black cheek patches, the characters of the two species varying in proportion in different individuals.—Of the *gecininæ* or ground woodpeckers there are none in North America; the green woodpecker of Europe (*gecinus viridis*, Boie), the genus being peculiar to the old world, feeds chiefly on ants and bees, and is generally seen on the ground.—The *picumninæ* or piculets are very small birds, having a short bill, sharp at the tip, rounded wings, and a short tail with broad rounded feathers, evidently not used as a means of support; they are found in the warm parts of South America, and in India and its archipelago; they nest in holes of trees, and lay 2 eggs. *Picumnus minutissimus* (Temm.) is the type, connecting the true woodpeckers with the wrynecks.—For details on other North American species of woodpeckers, see vol. ix. of the Pacific railroad reports, pp. 79–125 (1858).

WOODS, Leonard, D.D., an American divine, born in Princeton, Mass., June 19, 1774, died in Andover, Mass., Aug. 24, 1854. He was graduated at Harvard college in 1796, and in 1798 was licensed to preach by the Cambridge association. In November of the same year he was ordained pastor of the church at Newbury. When the theological seminary was established at Andover in 1808, he was appointed to the professorship of theology, which place he continued to occupy 38 years. During that time he took an important part in the establishment of various benevolent institutions, particularly the American tract society, the American education society, the temperance society, the American board of commissioners for foreign missions, &c. In the last mentioned board, he was a member of the prudential committee for about 25 years. He was also engaged in several important theological controversies, in all of which he manifested great good temper as well as much skill. He received the degree of D.D. from Dartmouth college, and also from the college of New Jersey, in 1810. In 1846 he retired from his professorship, and from that time was engaged for several years in preparing for the press his theological lectures, and a portion of his other writings, which were published in 5 vols. 8vo. (1849–'50).—His son, Leonard, D.D., was graduated at Union college in 1827, was licensed to preach, was for some time editor of the "Literary and Theological Review" in New York, has translated Knapp's "Lectures on Christian Theology," and since 1839 has been president of Bowdoin college.

WOODSON, a S. E. co. of Kansas, drained by the Verdigris river and branches of the Neosho; area, about 800 sq. m.; pop. in 1860, 1,488. The surface is level or undulating, and the soil fertile.

WOODSTOCK, a post village and township, and the capital of Windsor co., Vt., 46 m. from Montpelier, on the Ottauquechee, an affluent of the Connecticut river; pop. in 1860, 3,062. It contains 5 churches, 2 newspaper offices, a bank, a savings bank, the Vermont medical college (founded by Dr. Joseph A. Gallup in 1827 and incorporated in 1835), and manufactories of scythes, axes, carding machines, tinsmiths' machines, straw cutters, guns, woollen goods, &c. The state legislature sat here in 1807.

WOODWARD, Samuel Bayard, M.D., an American physician, born in Torrington, Conn., June 10, 1787, died in Northampton, Mass., Jan. 3, 1850. He commenced practice in 1809 at Wethersfield, Conn., where he became physician to the state prison, and was for some years a member of the Connecticut senate. He took a prominent share in the establishment of the "Retreat for the Insane" at Hartford, and in 1832 was called to the superintendency of the state lunatic hospital at Worcester, Mass. In 1846 he removed to Northampton on account of his health. While at Worcester he had projected an asylum for inebriates, and in a series of papers published in the "Boston Mercantile Journal" had advocated it with great earnestness. In 1846 he wrote to Judge Byington, then in the Massachusetts senate, begging him to bring forward some plan for the training of idiot children. This plea led to the establishment of the Massachusetts school for idiotic youth. Beside elaborate annual reports while connected with the lunatic hospital, he published a little volume entitled "Hints to the Young," and after his removal to Northampton an essay on the "Fruits of New England."

WOODWORTH, Samuel, an American author and editor, born in Scituate, Mass., Jan. 13, 1785, died in New York, Dec. 9, 1842. He received a limited education in his native town, and was apprenticed to Benjamin Russell, editor and publisher of the "Columbian Centinel," of Boston. After the expiration of his indentures he engaged in literary pursuits, in which he continued with more or less success until the close of his life. He was one of the founders in 1823, in conjunction with George P. Morris, of the "New York Mirror." He produced a number of dramatic pieces, but his reputation rests principally upon his songs and miscellaneous poems, one of which, "The Old Oaken Bucket," has obtained a wide popularity. His collected poems were published, with a memoir, in 1861 (2 vols. 18mo., New York).

WOOL, primarily, and in popular usage specifically, the material constituting the fleece of the sheep; in a more general sense, the name given also to the nearly similar material forming parts of the covering of certain other animals, as the alpaca, certain species of goat, &c. (See SHEEP; also ALPACA, GOAT, and CASHMERE.) It will be observed that the product properly answering to wool upon the alpaca, and the Cashmere, Rocky mountain, and some other species of goat, is found only on certain portions of the body of those animals, or forms where it does grow a thicker under coat, through which, and often hiding it, appears a thinner but longer coating of hair. In like manner, the beaver, raccoon, wild cat, otter, and some other animals have next to the body a shorter and thick coat of proper wool, but mainly concealed by another of hair. Indeed, since even the sheep has hair upon the face and lower portions of the legs, there is no animal the covering upon the skin of which consists wholly of wool. The loss in fineness and weight of fleece, both of the sheep and of the wool-bearing goats, in case of their removal from comparatively high latitudes or mountainous regions to climates many degrees warmer, is a fact repeatedly verified in practice and generally known. Thus, all the facts go to establish the conclusions, that wool, like fur, is but a peculiar modification of hair; and that, to the extent to which it occurs naturally, the change has immediate reference to the adaptation of the animals exhibiting it to the rigors of the climates in which it takes place. Hence, it is true in a general way, subject to some exceptions through the influence of other conditions, that the fineness and weight of fleece increase in colder and diminish in warmer climates. Ordinarily, the distinction between wool and hair proper is sufficiently obvious. According to Professor Owen's definition, wool is that modification of hair which, as viewed under the microscope, is characterized by fine transverse or oblique lines, from 2,000 to 4,000 within the extent of an inch, indicative of a minutely imbricated (overlapping) scaly surface, and on which, together with the curved or twisted form of the fibres, depends its remarkable felting property. Beside its superiority in felting, wool is also distinguished from hair in being generally much the more soft and flexible. In some instances, however, it is not easy to decide to which of the two sorts parts of the covering of certain animals should be assigned. The present article will be devoted principally to the wool of the sheep and its manufacture. I. *The Structure and Qualities of Wool.* The peculiar structure of the woolly fibre was first determined, by means of observations made with a powerful microscope, by Mr. Youatt; and his results have since been confirmed or slightly corrected by those of later observers. Placed under a lens of high magnifying power, each fibre of wool has the appearance of a continuous stem showing along its margins minute serrations, like teeth of an extremely fine saw; and a closer inspection reveals the fact that these are severally continuous around the entire fibre, so that they may be compared to as many circular leaves, cups, or calyxes, set successively into each other, and all opening or pointing in the direction from the root toward the free extremity. It was by examination of a fibre of merino wool that these cup-like ridges were first discovered; but once recognized, it is very easy to detect them in the coarser sorts of fibres. As already intimated, hair of all sorts presents a surface similarly imbricated, though the ridges are in hair always less frequent in a given length, and often for their magnitude less sharply defined. In either hair or wool, the effect is that familiarly illustrated by the ease with which the fibre can be drawn between the fingers from the root toward the point, and the resistance experienced when it is drawn in the contrary direction. Upon holding up to the light a lock of wool, or a single fibre, it is further observed that the fibres have all permanently acquired in their growth a form more or less twisted or spiral, like that of a corkscrew; and by the two characteristics thus discovered the felting and thread-forming qualities of wool, and the valuable applications growing out of them, are at once explained. The contorted form of the fibres disposes them to embrace or interlace with, or to hook on to each other; and the serratures, when the fibres are brought close together in felt, thread, or cloth, present that resistance to slipping and separation which is indispensable to the strength of the fabric. In the long merino and Saxon wools, these scales or projections are very distinct and acutely pointed; in the South Down, somewhat less distinct and sharp; in the Leicester, at least the ordinary variety, quite rounded off and indistinct. In fine Saxon wool, 2,720 of these imbrications are found to the inch; in the ordinary merino, 2,400; in the Australian merino, 1,920 to 2,400; in South Down, 2,000 to 2,080; in Leicester wool, 1,850 to 1,860. So far as this single quality is concerned, the results are in strict accordance with the known relative values of the several wools for manufacture; since the felting of Saxon wool is superior to that of all others, that of the South Down inferior to that of both Saxon and ordinary merino, and that of the Leicester least of all. Either the South Down or Leicester wool, alone, makes a fuzzy, hairy cloth, and neither is now used in England except for the poorest cloths, or when largely admixed with wool of a better quality of fibre. Of two varieties of wool in which the number of the imbrications is about equal, that in which they are at once smaller and more uniform will be the softer and more elastic.—Like hair, wool, though an organized growth, is to be regarded as in one way a secretion, or even an excretion, from the fluids of the animal body; its chemical constitution is mainly of a substance allied to albumen and fibrine, and specifically almost identical with that of horn and the epidermis or scarf skin. Each fibre grows from a pit or follicle in the skin, and in which are also minute glands furnishing at the same time with the formation of the fibre, and throwing out along with it, a profuse secretion of an oily or fatty material. Of the weight of wool as existing on or removed from the sheep, this latter always forms a considerable, and sometimes a very large proportion; it is commonly known as the "yolk" of the wool or fleece. This yolk Vauquelin found to consist generally of: 1, a soapy matter with a basis of potash (this being the larger part of it); 2, a small quantity of carbonate of potash; 3, traces of acetate of potash, 4, of lime, and 5, of chloride of potassium; and 6, an animal oil, giving to the yolk its peculiar odor. This substance, then, is not strictly a grease or oil; substantially, it is a soap with an excess of oil. Hence the facts that in warmish water it dissolves freely, and may be washed almost entirely out of the fleece; and that, though it leaves an unctuous feeling upon the hands, yet it cleanses and whitens them, as soap does. Hence also the fact that in the hard water of limestone regions wool washes much less cleanly, and parts with less of its weight. (See WATER.) The quantity and degree of fluidity of the yolk in different wools vary greatly, depending upon many conditions, being usually greater as the sheep are healthy and well fed, especially upon succulent food, but always more abundant in some varieties than in others. The coarsest wools rarely contain less than 20 per cent. of yolk; South Down averages 45 to 50 per cent.; and in the finest merino and Saxon wools it ranges from 60 to 75 per cent. of the weight, and has even been known to reach 80 per cent. In the merinos, this abundant secretion, catching dust and drying down in the outside wool, forms the black gum giving the dark color to the sheep, and which by breeders is usually prized as an evidence of superior quality of fleece. Obvious uses of the yolk are, to maintain the softness and pliancy of the fibres, and to protect them from that wearing off of the scaly projections which must otherwise result from their friction upon one another during the movements of the animal. —Among the qualities which severally go to determine the desirableness of wools for manufacturing purposes, and so to regulate their commercial value and classification, and which are accordingly to be regarded by the wool merchant and grower, are the following, of which some are observed in the single fibre, others in the fleece. 1. Capacity for felting, already considered. 2. Fineness, which, of all the obvious qualities of wool, has ever been esteemed the most important. Relative, as well as absolute fineness of fibre, is readily determined under the microscope. Dr. Parry in this way measured fibres of 19 sorts of wool; the finest was that of a Spanish merino ewe, the mean diameter being $\frac{1}{1370}$ of an inch; that of the fibre of the ram was $\frac{1}{1234}$ inch; of a Rambouillet ewe, $\frac{1}{1137}$; of a South Down, $\frac{1}{1110}$; of an Anglo-Negrette ram, $\frac{1}{105}$; and of a Wiltshire ewe, $\frac{1}{806}$ inch; the average diameter of the coarsest combing wools was $\frac{1}{450}$ of an inch. Dr. Ure's results for the fine wools, ranging from $\frac{1}{1300}$ to $\frac{1}{1100}$ of an inch, nearly coincide with the former. The Saxon merinos have been preëminent for fineness of fibre; but in 1860 there were exhibited in London American merino fibres of a diameter of $\frac{1}{1572}$, and American Saxon of $\frac{1}{1875}$ of an inch—the latter, it appears, that of the fleece of the prize ram "Premium," belonging to H. S. Randall, of Cortland, N. Y. The fibre of South Down is usually larger than as above given, being sometimes $\frac{1}{600}$ of an inch. A single fleece, however, of whatever character, yields several sorts of wool, differing prominently in fineness. The finest wool grows on the shoulders and along the back; that next in fineness on the neck, under the shoulders, and along the ribs; next, on the legs, thighs, and haunch; the coarsest of all under the neck, on the breast, belly, and lower part of the legs. Generally, the fineness of fibre appears to vary with the fineness of texture of the skin itself and smallness of the follicles; and it is further materially influenced by certain conditions, the most effectual of which are the quantity and quality of the feed, and the heat or cold to which the animal is exposed. Abundance of nutriment, according to the testimony of both European and American wool-growers, will increase not only the length, but also the grossness or coarseness of the fibres; while a continued scanty subsistence, but not poor enough to impair the health of the animals, without deteriorating the softness or quality in other respects, secures a very evident improvement in the fineness of the wool. So, in the warm season, and in case of sheep warmly housed, the fibre grows larger; while cold weather and exposure cause it to become more fine. Mr. Randall asserts that between those seasons in which his flock were maintained in high condition, and those in which they kept but an ordinary or poor condition, there was a marked difference of fineness, and in favor of the latter; but he recommends for general practice free feeding on succulent rather than fattening food, and a dependence on skilful crossing of breeds to maintain or secure the desired fineness in the wool. 3. Softness. Wool showing this quality in decided degree is far more valuable than that which, as tested by twisting, bending, or handling it, is stiff and hard. The best wool is soft in proportion to its fineness, the Saxon being the softest of all. One of the worst effects of a too poor keeping of the flock, or of a diseased condition, is to interfere with the perfect growth of the fibre and supply of yolk, and so to produce a fibre at once hard and uneven or irregular in size. 4. Pliancy and elasticity. The existence of these qualities in the fibres is closely dependent on the same conditions as those determining its softness; and their presence is detected readily and in a similar manner. 5. Evenness or trueness of staple. The fibres should be of nearly equal diameter from root to point. If the wool presents an irregular, shagged, or breachy appearance, then weakness of the fibres is indicated, and the manufacture will be irregular, or in combing the fibres are liable to break. 6. Soundness. The fibres of any lock of the fleece examined should be free from any finer or weaker spot or "joint," occasioned by temporary ill condition of the animal. Weak spots can often be detected by the eye; but if the fibre is strong, and uniformly so throughout, it is said to be sound. The surest tests are, that, if the lock or staple be held at the ends with the two hands so as to stretch it and allow the third finger of the right hand to play firmly upon the fibres, it will if sound yield a firm and sharp resonance; and a like result will be secured by straining it suddenly by jerking the hands apart. The shorter the staple, the more important is its soundness. 7. Length. A long fibre is not now, as it once was, objectionable for manufacturing purposes, in even the finest staple; and relatively, the lengths of the different fibres in each sort of wool in the fleece should be nearly uniform. 8. Fulness, by which is understood the closeness of growth of the fibres in the lock or fleece. It is not found practicable to produce on the same animal a maximum both of fulness and length; the grower must accordingly aim at that combination of the two giving the heaviest fleece, or at the predominance of either as may best suit the purposes to which the variety of wool is put. 9. Freeness. Wool is described as free when the locks are not entangled, but these or the fibres part off readily from one another. 10. Color. This has long been a point of prime importance; since perfect whiteness of the fibre, when freed from dust, yolk, and gum, is a condition indispensable to a rich or brilliant dye. 11. Cleanness. This is not merely important as giving true weight, and tending to fairness of valuation, but as preventing a sort of fermentation due to retained yolk in the shorn fleece, which is liable to deteriorate the wool. Indeed, the grower will find his profit in clipping off dirty locks, in rolling his fleeces neatly and uniformly, and in assorting them as fairly as possible into sets of like quality. 12. Style. This quality, recognized by Mr. Randall, is more vague than the preceding, and appears to express the result of a combination of the useful and showy qualities that chiefly give value to wool, among which are fineness, whiteness, lustre, soundness, and a uniformity in these respects throughout the fibres. Although it is desirable mainly to free the wool from the yolk previously in it, yet after washing the sheep they should be allowed to run for from 2 to 4 days in a clean pasture, until the wool becomes dry, and the quantity of yolk freshly secreted in the meanwhile is not objectionable, while it adds to the softness and style of the fleece.—Evidently, as already implied, not only the quantity, but also the nature and quality of the food of a flock must in a positive manner influence the weight and quality of wool produced by it; but the subject is one upon which no very complete or decisive results have yet been attained. Since the animal tissues derive their chemical components from the like components in the food, and since the principal substance of wool is closely allied to that of flesh, nitrogen forming in it (according to Johnston) full 17.71 per cent. of the organic material, it appears to follow conclusively that food adapted to the forming of muscle, rather than of fat, is also that which will supply, other things being equal, the greatest growth and weight of wool. The food adapted to the production of muscle is that known generally as "nitrogenous" or "azotized"—*i. e.*, that in which the organic nitrogen compounds, albumen, gluten, and legumine, are largely present. The results obtained by Réaumur in experiments on Saxon sheep, in Silesia, show a striking general correspondence between the amount of wool produced and that of the nitrogen in the food at the same time. In these experiments, 1,000 lbs. of each kind of food named in the following table produced the increase given in gross weight, wool, and tallow, respectively:

Food.	Increase in weight of the animal.	Wool produced.		Tallow produced.		Per cent. of nitrogen in the food.
	lbs.	lbs.	oz.	lbs.	oz.	
Raw potatoes, with salt..........	46½	6	8¾	12	5½	0.36
" " without salt......	44	6	8	10	14½	0.36
Raw mangel wurzel............	38	5	3½	6	5½	0.21
Peas........................	134	14	11	41	6	3.83
Rye, with salt..................	90	13	14½	35	11½	2.00
" without salt..............	83	12	10½	33	8½	2.00
Wheat........................	155	13	13½	59	9	2.09
Oats..........................	146	9	12	40	8	1.70
Barley........................	136	11	6½	60	1	1.90
Buckwheat....................	120	10	4½	33	8	2.10
Good hay....................	58	7	10½	12	14	1.15
Hay, with straw, without other fodder....................	31	15	8(?)	6	11	..
Still grains, or wash, of whiskey..	35	6	1	4	00	..

The effect of peas, and of wheat and rye, is particularly worthy of notice; while Mr. Randall suggests that the quantity of wool set down against "hay, with straw," &c., would appear to be an error in the table. Mr. P. L. Simmonds, of England, gives the following as the relative weights of wool found to be produced by use of the sorts of food named: Potatoes, raw, with salt, 6½; mangel wurzel, raw, 5¼; wheat, 14; oats, 10; rye, with salt, 14, and without salt, 12½; barley, 12½; peas, 16½; buckwheat, 10.—Of the 4 known species of the llama, only the alpaca yields a wool combining extreme fineness with length of staple. The length of the wool ranges usually from 6 to 12 inches; and if the animal go long unshorn, the fleece, without becoming coarse, attains an extraordinary length, samples of 42 inches having been obtained. The usual weight of an alpaca fleece is from 10 to 12 lbs. The wool produced by a cross of the alpaca with the vicuña, another species of llama, is of very small amount, but soft and downy. Although by Peruvian law the exportation of the alpaca, vicuña, and other species of llama is forbidden, yet the two former have been under special grants introduced into Australia, and certain parts of Europe and the United States. In Australia the flocks are becoming large, and the prospect indicates entire success of the experiment. The whitest wool known in commerce is that of the Angora goat, termed mohair. The fleece, weighing 2 to 4 lbs., and free from under-down, is very silky, hanging in curls of an average length of about 5 inches. The proper wool of the Cashmere goat, which is the under coating, is short, but peculiarly soft, rich, and lustrous. The task of separating this, fibre by fibre, from the hair or "hemp" of the outer coat, is very tedious; and, despite the cheapness of Indian labor, this constitutes one chief element in the enormous cost of the shawls fabricated from this wool. The fleece of the Rocky mountain goat is white and soft, and is said to combine two coats, both of which nearly answer to wool; the one to lamb's wool, the other to the under coat of the poodle dog.

II. *History of Wool and the Wool Trade.* The very obvious tendency of the fibres of wool to interlace and hold together upon being firmly pressed, in the fleece, or drawn out and twisted between the fingers, must have suggested at an extremely early period the practicability of forming garments of wool; at first, it may have been, by a rude process of felting; afterward, when the weaving of natural filaments, of leathern strips, &c., came to be practised, by the making of fabrics, through use of the distaff and loom. It appears that the rearing of sheep dates from the earliest times; the passages in the Bible alluding to sheep, wool, and woollen garments are well known; and it is a noticeable fact that distinct mention of the last two of these begins at a period much later than that in connection with which the first is named. In Lev. xiii. mention is made of garments having "the warp or woof of linen, or of woollen;" and these two materials appear to have been the staples of the primitive weavers of Syria, Palestine, Greece, Italy, and Spain. Pindar applies to Libya the epithet "flock-abounding" (πολυμηλος). Attic wool was celebrated from an extremely early period, and at least down to the time of the Latin poet Laberius, in the first century before the Christian era; and the woollen fabrics of both Greece and Italy attained special excellence. Strabo, however, living in the first century of our era, remarks that the fine cloths worn by the Romans in his time were manufactured from wool brought from Spain. Pliny, himself a governor of Spain, describes several fine-woolled varieties of sheep as having long been reared in that country. In view of these facts, further doubt is thrown upon the two attempts to account for the origin of the merino sheep, neither of which in itself appears to wear the stamp of consistency. According to the oldest of these, Columella, a Roman residing near Cadiz, and just before the time of Pliny, coupled fine-wool Tarentian (Italian) ewes with wild rams brought from Barbary; and this cross is said to have been repeated 13, and again 15 centuries later, by Pedro IV. of Castile and Cardinal Ximenes; so that the merino breed would have acquired its perfect character but a little while before, in the 17th century, it began to attract special attention in foreign countries. By those who discredit this explanation, the Barbary crosses are declared to have been made with the Chunah or long-woolled sheep of Spain, a breed wholly distinct from the merino. The other account referred to is to the effect that the famous merino flocks of Spain had their origin from English sheep exported to that country about the 13th or 14th century. Such an origin is more or less directly implied by some Spanish writers of the period, the coming over of the English sheep being referred to as an important event, and as the date of which Davila assigns the year 1393. At all events, when the merinos of Spain first attracted the observation of other nations, they were found in nearly all parts of the country, and mainly in very large permanent flocks, which in separate districts appeared as different varieties; while so special were the management and lines of breeding, that the several flocks often constituted so many sub-varieties. The flocks were of two general sorts, the travelling (*transhumantes*) and stationary (*estantes*). They were chiefly owned by the king and some of the nobles and clergy; and such was the importance attached to the products of these flocks, that the cultivators of vineyards and arable lands were by law required to leave broad roads through their estates for the passage of the flocks from the southerly to the northerly provinces in spring and their return in autumn, or for such other migrations as their owners might desire; and in fact all other agricultural interests were sacrificed to the convenience of their proprietors. Livingston, classifying the merinos of Spain at the beginning of the present century, declares those of Castile and Leon to be the largest and to have the finest fleece; those of Soria small, with very fine wool; those of Valencia of fine wool, but with a very short staple. The Leonese travelling flocks were considered the best of all; these chiefly attracted foreign notice, and from them the principal importations into the United States were made. Livingston places the weight of the Spanish fleeces at 8½ lbs. for the ram and 5 lbs. for the ewe, the loss of weight in washing being one half.

Youatt makes the averages 8 and 5 lbs. The large shrinkage given by the former is to be accounted for by the thoroughness of washing as practised in Spain. The acclimation of the Spanish merino in France, and indeed anywhere out of its native country, appears first to have been attempted by Colbert, who died in 1683. The first successful importation into France was that in 1786 of about 300 sheep, selected, by order of the king of Spain in response to the application of Louis XVI., from the finest flocks in Spain; these were placed on lands devoted to the improvement of domestic animals at Rambouillet, about 40 miles from Paris. Taken from many different flocks, these sheep gradually blended into one variety, thriving in their new locality, and yielding a fleece no finer, but of increasing weight, from an average of 6 lbs. 9 oz. in 1796, to 9 lbs. 1 oz. in 1801; while at the former date, according to Gilbert, fleeces of rams 2 years old and upward usually weighed 12 to 13 lbs. In 1827 these French merinos were described as large and unsightly, with fleeces from fine to indifferent, but mainly improved on the original Spanish, while the average weight of fleece had rather gained than lost. The successful introduction of the merino sheep into Saxony was somewhat earlier than in France, through the importation by Prince Xavier of 300 sheep of the Escurial division of Leonese (travelling). Obvious alterations early occurred in these sheep, in the way of loss in the size of carcass, in the weight of fleece, and in constitutional vigor and hardiness; but the wool became extremely fine, soft, downy, pliable, and lustrous. Baron von Sternburg, whose flock numbers 1,200, gave in 1859 the average weights of fleece of his Saxon merinos at 2 lbs. 7 oz., washed, for ewes, and for rams 4 lbs. to 6 lbs. 14 oz. Some offshoots of the Saxon merinos, when fully established, and other sheep directly from Spain, having been transported into Prussian Silesia, another modification of the breed has been the result, in the sheep known as the Silesian merinos.—The English government records of a very early period show repeated acts or edicts ostensibly forbidding the exportation of wool from the kingdom to other countries of Europe, but which for some time in reality prepared the way for profitable licenses of such trade or for special grants to individuals. In the 13th century a considerable wool traffic with Italy and the Low Countries had already grown up, its importance being intimated by such facts as that Edward I. was enabled to make a gift to John, duke of Brabant, his son-in-law, of £4,000 out of the customs on wools. In the same century, in consequence of the difficulties attending the traffic, and growing out of both adverse laws and the frequent forcible seizures of wool by the barons, several guilds or associations of the merchants for mutual protection were formed, among these being the "merchants of the steelyard," or "easterlings," the "merchants of the staple," and others. The first act intended to prohibit the exportation of British wool was that of Edward III. in 1337. The purpose of restrictive measures in the outset appears to have been twofold: to secure control of the trade, with revenue in some instances, to the crown, and to encourage woollen manufactures in England. Still, in 1354, the export of wool amounted to 31,651½ sacks, at £6 the sack. As the manufacture of wool grew in amount and importance, the interests of the manufacturers and of the staplers or exporters came more decidedly into conflict; and under the clamors of the former, entire prohibition of the export of wool was finally enacted, to be in force from the year 1660. This prohibition existed in law, and unqualified, until 1825. While the advantages of this policy were repeatedly contested in pamphlets and by other modes of agitation, and various expedients were resorted to with a view to favor home consumption of the wool product, the most marked results of the law were considerably to lower for a long period the prices of wool, and to maintain an enormous smuggling trade, attended with all the incidents of loss, vice, and crime, that are its natural accompaniments. Even in the 16th century, the superiority for cloth-making of the Herefordshire wool was celebrated; the poet Drayton lauds the beauty of the Leominster wool, and the abundance of that of the Cotswold flocks; while a Portuguese contemporary, Bernardo de Brito, speaks of "those English wools which have been likened to hills of snow." Until 1802 the importation of foreign wool into Great Britain was free; and the quantity was increasing, the total from 1791 to 1799 being 34,011,369 lbs., of which not less than 33,190,595 lbs. was Spanish. This importation gave an additional stimulus to the efforts of the home breeders to improve their flocks, a leading object for a time being, as it was expressed, to put upon South Down mutton a merino fleece. Though it was found impossible thus to combine the finest wool with the finest mutton, yet in certain ways improvements were secured in one or both; but the general result, it is now admitted, was unfavorable to the value of the wool for manufacture; since, by use of turnips and other forcing means, the farmers succeeded in increasing the weight both of carcass and fleece, but lost in quality for purposes of the clothier what they gained in quantity, the wool becoming better fitted for combing, but less adapted to the making of cloth. Finally, at the demand of the wool growers, a duty of 5*s.* 3*d.* the cwt. was in 1802 laid on imported wool; and this was increased until in 1819 it had risen to 56*s.*, or nearly 50 per cent. on the price of a large proportion of the imported article. Under this duty, the importation of Spanish wool increased much less rapidly than before, amounting in 1825 to 8,206,427 lbs.; while imports of German (mainly Saxon) wool, from less than half a million pounds in 1800, in 1825 became 28,-

799,661 lbs. Meanwhile a large import gradually grew up from the transportation by Capt. John Macarthur to New South Wales in 1797 of a few merino sheep, this supply in 1829 reaching more than 1,000,000 lbs., and in 1859, 53,700,542 lbs. In 1825 the duty on foreign wools was reduced from 6*d.* to 1*d.* and ½*d.*, according to quality, while colonial was admitted duty free; after June, 1844, the penny duty was discontinued. In 1845 the import of wool was nearly 18,000,000 lbs. in excess of that in 1843; yet the prices of home wool rose at the same time. The importation from British colonies in Africa, beginning about the year 1820, amounted in 1859 to 14,361,403 lbs. In 1825 the change from prohibition to the low duty of 1*d.* per pound on export wool went into effect at the same time with the reduction to the like rate of the import duty. In consequence of evidence given by the wool growers before a committee of the house of lords, in 1828, it was deemed impolitic to impose higher rates, and such have not been resorted to since that time. In 1859 the export of sheep and lambs' wool, foreign and colonial, from the United Kingdom, was 28,829,980 lbs.; and of alpaca wool, 276,770 lbs. Mr. Leonard Wray estimates the number of sheep in the United Kingdom in 1860 at 55,000,000, and the wool product at 275,000,000 lbs.; Mr. Simmonds makes the number of sheep 50,000,000, and the amount of wool 250,000,000 lbs. In the same year the total imports were: from Australia, 59,165,939 lbs.; northern Europe, 38,840,961; East Indies, 20,214,173; South Africa, 16,574,345; other countries, 10,705,233; total, 145,500,651 lbs. Deducting from this 30,500,000 lbs. exports, and adding the remainder to the lowest estimate of the home product above given, there appears a total of 365,000,000 lbs., all or nearly all of which must be supposed to correspond at the time to a year's consumption in the various forms of woollen manufacture in Great Britain.—The breeds of sheep which have been, or are now, principally known in the United States, are the so called "native" sheep, the Spanish and Saxon merinos, and, of those introduced from England since about the year 1830, the new Leicester or Bakewell, the South Down, Cotswold, and Cheviot. It is believed that there is not now raised in this country any breed of sheep that can be regarded as properly native, *i. e.*, indigenous. The sheep known as native are the common coarse-woolled sorts which existed throughout the settled portions of the country previous to the importation of improved breeds; they had their origin chiefly from England, but to some extent also from Holland and other European countries; and as the several bodies of colonists would naturally select each such variety as preference or convenience might dictate, the native sheep must be regarded as having their descent from several varieties, though under the new conditions of climate, with less care in rearing than had been practised in the older countries, and through intermixture, the breed became in a manner homogeneous, at the same time that it necessarily deteriorated. Some writers have intimated, however, that the native sheep are in part descended from a species of the genus *ovis* really indigenous to this country, now found in the regions of the Rocky mountains, and known as the argali; and they have suggested that the roving and breachy disposition so generally noticed in the common sheep is to be explained by the fact of such origin. The common sheep yielded a wool only suited to the coarsest fabrics, and of which a good average weight per head did not exceed 3 or 3½ lbs. The fleeces were of very uneven fineness, being hairy on the thighs and dewlap. In later years, the crossing of the common breed with the imported varieties has greatly improved its wool-bearing qualities, both in respect to fibre and weight; and indeed, as a distinct stock it has now nearly disappeared. The first Spanish merino sheep brought to this country in 1793, 3 in number, were not kept for breeding purposes. Of 4 young merino rams sent in 1801 by Mr. Delessert, a Parisian banker, to America, one arrived safely, and was kept upon his farm at Rosendale, near Kingston, N. Y. In the same year Mr. Seth Adams, of Zanesville, Ohio, imported a pair of Spanish sheep, and in the next year Mr. Livingston sent two pairs to his estate on the Hudson; both these latter purchases being from the merinos then lately introduced from Spain into France. Mr. Livingston subsequently imported one or more other merino rams, and reared and disposed of both the pure merino and half-breeds. In 1802 Col. Humphreys, at the close of a 5 years' residence as American minister in Spain, brought with him a large flock of merinos, at least 91 of which were landed safely at Derby, Conn. Mr. William Jarvis, consul at Lisbon, also sent, in 1809, '10, and '11, large flocks of these sheep to his residence, at Weathersfield, Vt.; and several other importations were made about and subsequently to the same period, some of the later of these being of very large numbers. The wool of the pure merinos kept or bred in this country did not deteriorate in fineness, and in some instances slightly increased in weight. Mr. Livingston's ewes averaged of unwashed wool 5 lbs. 2 oz., his rams 6 lbs. 7 oz. Attention was first generally attracted to these sheep about the year 1808, and a spirit of speculation soon carried the price of good rams up to $1,000 or $1,500, while merino wool unwashed sold at $1, and even for a time at $2 a pound. Acts were passed by the legislature of New York for the encouragement of home manufacture of woollens, in 1808, '10, and '12; and considerable sums were paid out under these in premiums for domestic cloths. Upon the conclusion of the peace of Ghent in 1814, wool growing and manufacture in this country again came in competition with that of Europe, while prices of all commodities suddenly sunk from a war to a peace standard. Many wool growers abandoned their business; merino sheep and wool fell to extremely low prices; the breed was in the main abandoned, and suffered to run out or to disappear for the time in crosses with the common sheep. In 1824 a duty of 15 to 20 per cent. *ad valorem*, to be increased to 30 per cent. in 1826, was laid on imported wools, and a duty of 30, to be increased to 33⅓ per cent., on imported cloths. The protection thus afforded to wool and its fabrics again turned attention to the raising of sheep; and the Saxon merinos being introduced by many importations and in large numbers about this time, another remarkable tide of speculation in Saxon sheep and fine wool set in. The tariff of 1833 commenced a progressive reduction of the duties on the finer sorts of wool; but, with some fluctuations, high rates were generally maintained, both specific and *ad valorem* duties being laid on most qualities of wool and woollen fabrics, until in 1846 an even *ad valorem* duty of 30 per cent. was fixed on all wools and cloths. Soon after this, many of the principal woollen manufactories of the United States ceased operation, the making of broadcloth especially being quite discontinued. In 1857 the duties were further lowered; while by the act of March 2, 1861, the rates were made exceedingly various on the different styles of wool and the different fabrics, the general effect not being a very decided increase. In 1824 the average prices of domestic wools, fine, medium, and coarse, were 65, 42½, and 31½ cts. per pound; in 1836 they were respectively 70, 60, and 50 cts.; the averages from 1827 to 1861 inclusive (35 years) were $50\frac{3}{10}$, $42\frac{8}{10}$, and 35½ cts.; in 1861 they were 44¼, 39¾, and 38¼ cts. The Saxon merinos were found, as already stated, to be not only feeble and unhardy, but to yield a very light fleece, so much so that in 1840 Mr. Grove, of Connecticut, published the average yield of 200 of these sheep—2 lbs. 11 oz. per head—as proof of the value of his particular breed. Meanwhile, as both more hardy and productive, the Spanish merinos were again attracting attention; and since about 1839 the Saxon variety has almost ceased to be sought or reared in this country. Mr. Randall regards the former, in all its sub-varieties, as having undergone such essential modification in the course of its acclimation here, as to be entitled to be considered a new variety, and known as the American merino; and in his "Fine Wool Sheep Husbandry," he gives very full details of the characteristics of the original and existing breeds. The American merino, pure and crossed, is now kept in considerable flocks in many parts of the United States. The French merino was first imported in 1840 by Mr. D. C. Collins; these sheep are found to be hardy and large, and to yield heavy fleeces of fine and even wool. The Silesian merino began to be imported in 1851 by Mr. William Chamberlain, of Red Hook, N. Y. These sheep also are large, their fleece heavy, and the wool often exquisitely fine. In the main, American fine wools continue to be inferior in fineness to the German and Austrian; the fact being doubtless explained in part by the less degree of care here bestowed in protecting the flocks against inclement weather, and in part by the want of disposition to encourage the smaller and more delicate varieties upon which the small weights of the finest wool are produced. For information respecting the improved varieties of sheep latterly imported from England, see SHEEP, and the works named at the close of this article. It may be added that the new Leicester was introduced about the year 1825, the South Down in 1834, and the Cotswold and Cheviot since that date. The returns of the census of the United States give the number of sheep in the whole country in 1850 as 21,723,220, and in 1860 as 23,317,756; while the quantities of wool returned for the same dates are 52,516,959 and 60,511,343 lbs. respectively; for the number of sheep and the wool product of the states severally, see UNITED STATES, vol. xv. pp. 790, 792. The exports of wool in the year 1860 were 389,512 lbs., and the imports 4,450,658 lbs. The latter, added to the home production, and diminished by the exports, leave a balance of about 64,572,000 lbs., which may be regarded as a yrar's consumption in woollen manufactures in this country.—A disease unusual to the sheep has recently broken out among European flocks, and is at this time (1862) prevalent in many parts of England and of the continent. The disease is called "small pox," and may be such essentially, as in the case of the horse and cattle long well known. Of flocks in which it has appeared, 65 per cent. have in some instances perished; but it is reported that by inoculating lambs with the virus, while a very small proportion die, those that survive are protected against attacks of the malady.—MANUFACTURES OF WOOL. Under this designation will be included the manufacture of both woollen and worsted goods; for, though the two sorts of products present many obvious differences of appearance, and the processes of their manufacture also differ to a considerable extent, yet they and their fabrication are to such a degree similar throughout, that it is not easy to treat of them under separate heads. The distinction between "pulled" and clipped or "fleece" wools is the first that is made by the merchant and manufacturer. Fleece wools, not only the more valuable, but constituting by far the greater portion of the entire wool of commerce, are then subdivided into the two great classes, of which the nominal, and in a general way the actual distinction, is expressed by terming them respectively wools of short staple and long staple, or short wools and long wools, or clothing wools and combing wools. The real distinction intended to be conveyed in the division so made, is that between those fleeces on the one hand the fibres of which possess the felting quality in so high a degree as to admit of being felted or fulled, and which can accordingly be used alone in the making of cloths, hat bodies, &c., and those fleeces on the other hand of which the felting quality is poor or wanting, so that alone they can be worked up in those fabrics only that require neither felting nor fulling, such as flannels, merinos, hosiery, carpets, lastings, &c. As the rule, then, the short-stapled fleece wools only are made into cloths, both the long fleece and pulled wools going to the other sort of fabrics. The length of fibre in the former ranges usually from 1 to 3 or 4 inches; if longer, it is cut before working. The two distinct classes of fabrics thus established are those known respectively under the general appellations of woollens and worsteds. It has, however, become not unusual to intermix some portion of long or combing wool in cloths proper; while in the making of merinos and many other worsted fabrics definite proportions of other materials, more commonly cotton, are now regularly and very generally combined; both these deviations from the ostensible characters of the goods being facilitated by the improvements, or at least modifications, introduced into the modern machinery employed in the factories. Thus, the sharp distinction between woollens and worsteds on the one hand, and between these and fabrics of other material on the other, has in part disappeared; and worsteds, which could originally be said to be made from combed, not carded wool, must now be described as made from wool either combed or combed and carded, and moreover as being generally not of simple wool, but mixed fabrics. A rough classification of fleece wools by the producers and merchants is that into fine, middling, and coarse. A more strict classification, made by the merchants in this country, divides the fleeces or their parts first into clothing and combing wools, and then subdivides the former into at least six grades, known as double extra, extra, and Nos. 1, 2, 3, 4; the latter into at least five grades, known as extra, and Nos. 1, 2, 3, 4. Even the double extra, however, has not the fineness of the best German (Saxon) wool; and it is quite certain that the distinctions made by the trade here are not by fixed standards, but subject to variation with the convenience or judgment of individual dealers. (See FELT, HAT, and SHODDY.) I. *History of Manufactures of Wool.* To some points in connection with the history of these manufactures allusion has necessarily been made in the preceding account of wool and the wool trade. Beside the antiquity of the processes of weaving and spinning, elsewhere mentioned, it is certain also that in very early times the dyeing of threads for the loom was practised, and that the thistle or teasel was employed, as the latter is now, to comb out a nap on the woven fabric. Among the Greeks and early Romans, not only weaving but the whole process of preparing the yarn was domestic. At the time of the Macedonian conquest the natives of India wove shawl cloths of great beauty; to the Egyptians and to the Hindoos the Greeks were probably indebted for most of their later processes of woollen manufacture; as, still later, were the Romans (by way of southern Italy and Sicily) and the people of Spain and of Byzantium, to the Greeks. Woollen garments were generally worn by the Romans of both sexes at a very early period. To the Greek skill transferred to the Byzantine colony were added in time contributions from the arts of Persia, India, and China; and Constantinople became famous for textile products of all the sorts then known, but in particular for the beauty and variety of its woollen fabrics. Some time after the establishment of the eastern empire, the more improved processes of the textile art gradually found their way to Italy. The Roman manufactures, such as they may have been at the time of the irruptions of the northern barbarians, appear not to have died out; they continued also in the countries in which Roman colonies had been established. A fraternity engaged in cloth manufactures appears to have been formed in the 10th century in the Low Countries; the wool of the country was first used, and imports afterward made, until this district furnished a considerable portion of the cloth demanded in Europe. Spain, however, already produced her own cloth, and in the 13th century the beauty of cloths made from her fine wools was already celebrated. Early in the same century some friars of St. Michael established a woollen manufactory in Florence, and apparently by processes superior to those previously in use; others of the like character soon sprung up at Rimini, Perugia, and elsewhere. Florence appears to have had at the time some 300 shops, producing annually 100,000 pieces of cloth, though these were of the coarser and cheaper sorts. Accounts some 30 years later speak of 200 shops as turning out 70,000 to 80,000 pieces, worth more than 1,200,000 golden florins, and hence, it must be supposed, of superior quality. Eventually, the manufactures of wool became most largely established in Flanders, England, and France; the people of Flanders having, in fact, so far taken precedence in the perfecting of textile processes and products, that her workmen became successively the instructors of the less skilled English and French clothiers, and in reality the founders of the improved manufactures now so important to the two last named countries.—Scarlet cloths of England are mentioned in the chronicles of Orkney in the 12th century; and under Henry I. a clothiers' guild (*gilda tellariorum*) was chartered, receiving exclusive privileges within the district of London, Southwark, and the parts adjacent. An inundation occurring in the Netherlands in the time of William the Conqueror, many of the clothiers driven from the country came to England; they were gladly welcomed, and established their business in Carlisle, and then in the western counties. A great number of statutes of this and the succeeding period relating to woollen manufactures, some of them of conflicting purport and others dictated by a narrow and unreasonable policy, show at least the growing importance of the business and an actual interest in its establishment in the country. Not merely, however, were the early woollen manufactures of England rude, but the records of the time abound with indications of the "untruthful making" of the cloths, to such an extent that many fine English cloths of the period appear to have been literally very base fabrications. Latimer in a sermon publicly condemned the "mixing of wares," the stretching of woven pieces to more than their proper length, and the practice of then restoring body in the cloth by incorporating into it a so called "flock powder," apparently consisting of chopped wool. Chalk and ointments are also named as being rubbed into the cloth, and the colors of cloths are much complained of, those of the north being in this respect worst. Practices of this sort and the complaints against them continued at least down to the end of the 16th century. A project for reforming these abuses, sent to Cecil, speaks of them as an enormity endangering the entire commodity of the realm; and in 1590 mention is made of persons appointed in the county of York "to deface, cut in pieces, or burn all such blocks or boards as have been or are used for chopping of flocks." In consequence of three successive invitations extended by Edward III. to Flemish cloth weavers to remove to England, many of these came over; and although for a time interfered with by riotous opposition on the part of the native workmen, and even having their cloths and worsteds subjected to an export duty discriminating against them and in favor of the latter, yet they successfully established their business, and contributed further to enlarge and advance the woollen manufactures of the country. The company of drapers (the word then signifying clothiers or cloth workers), though previously existing, was incorporated in 1364; the cloth shearers, or "shearmen," were separately incorporated in 1480; and in 1528 these were united with the fullers, by Henry VIII., in the association of cloth workers. The fraternity of tailors (now merchant tailors) received its charter in 1399. Beside these and the weavers, other companies, as those of the dyers, burrelers or burlers, and worsted workers, were gradually formed. The last named guild, as well as the class of fabrics in which they worked, took its name from the town of Worsted, in Norfolk, where these manufactures grew up, or at least centred. The early Norfolk weavers appear also to have been Flemings; and the distribution of the various manufactures not long after the accession of these workmen under Edward III. was as follows: Norfolk, worsteds; Suffolk, baize; Essex and Somersetshire, serges; Devonshire, kerseys; Wales, friezes; Kent, broadcloth; Gloucestershire, Worcestershire, Westmoreland, Yorkshire, Hampshire, Berkshire, and Sussex, cloth. During several subsequent reigns attention was very largely given to worsteds, and English cloths were still mainly of coarser quality, the finest cloths being imported from Brabant. The exports of English cloths meanwhile became so large, that when, in the reign of Henry VIII., the ports of Spain and the Netherlands were closed to them, great distress arose among the manufacturers. At this time Blackwell hall was established as a sort of cloth hall for London dealers; while the foreign trade was mainly in the hands of the company of "merchant adventurers," who had their mart at Antwerp. The further immigration of Flemish cloth workers in the time of Elizabeth, with the more enlightened policy of that queen, resulted in a very considerable impulse to the manufactures of wool throughout the kingdom; during the following reign, however, and in fact until the close of the 17th century, the contest between the manufacturers and the growers of wool, with the narrow policy of the government, restricting the manufacturers to certain localities or corporations, prohibiting the export of undyed cloths, and all dealing in cloths by foreigners, &c., chiefly characterize the history of the business, and resulted very naturally in depressing it and retarding its progress. In the early part of the 18th century Yorkshire began to assume a more important position in these manufactures, and this county afterward became the chief seat of both the English worsteds and woollens; and though the inventions in connection with spinning machinery for a time gave an unusual prominence to the cotton manufacture, yet the improvement in mechanism and processes for manufactures in wool soon followed, and, aided by the perfection attained by the German wools and the large supplies from other sources, as well as by a more liberal commercial policy, resulted at length in a more healthy condition and growth of these manufactures, which has continued to the present time. Leeds, Stroud, Huddersfield, Chippenham, and several other localities are now distinguished for their cloths of various kinds; while Bradford, in Yorkshire, which in 1857 employed in this manufacture 521,860 spindles and 18,761 power looms, with more than 36,000 workmen, and Halifax, Norwich, and other places, are equally distinguished for the various species of worsted goods. The number of pieces of cloths or woollens exported from Great Britain in the years 1816, 1846, and 1859, respectively, is estimated at 636,368, 288,580, and 574,240; the number of pieces of woollen and worsted, or, generally, worsted stuffs, in the same years, 593,308, 1,748,430, and 2,721,941. The declared real value of the aggregate exports of British woollen and worsted manufactures increased from £6,335,102 in 1846, to £12,053,708 in 1859; that of woollen and worsted yarns for the same years was £980,270 and £3,104,061. Mr. Baines estimated the total outlay of the woollen manufactures of the United Kingdom for 1858 at £20,290,079; and Mr. James, the total expenditure in the worsted branch for 1857 at £18,000,000. The numbers of persons actually engaged in these respective branches are calculated at 150,000 and 120,000; and the total number dependent on the two together at 825,000.—The woollen manufactures of France were of inferior quality and unimportant in amount until the period immediately following the edict of Nantes, 1598, and the further accession of cloth workers from Spain in consequence of the intolerance of Philip III. The first marked impulse, however, was given to the business through the exertions of Colbert, who induced Van Robais, of Holland, to undertake the manufacture at Abbeville; and to this establishments at Louviers and elsewhere soon succeeded. The progress of the manufactures was still slow and unequal, although these have from the first, with but brief intervals, been sustained by duties on foreign cloths amounting nearly to prohibition. About the middle of the 18th century the woollen manufactures became more firmly established, and they have since so continued; while the best French cloths are in quality and durability surpassed by those of no other nation, unless it may be the German. The chief centres of manufacture are: for cloths of all sorts, Elbeuf; for fine black cloths and fancy fabrics, Sedan and Louviers; for common cloths, &c., Vienne, Nancy, Metz, Orleans, and Carcassonne; and for worsteds and mixed goods, Rheims and Limoges. The total exports of woollen and worsted fabrics for 1857 were:

	Value in francs.
Table covers	2,811,124
Carpets	1,039,138
Cassimeres	194,040
Merinos	22,328,673
Cloths	44,373,155
Stuffs of various kinds	44,139,719
Shawls	17,724,789
Lace	58,860
Woollen caps, &c.	4,209,013
Ribbons and small wares	1,783,638
Mixed fabrics	40,148,424
Cashmere shawls	424,958
Other cashmere fabrics	8,190
Carpets and table covers (additional)	92,305
Total	179,336,226

—The policy of England toward the American colonies, so long as they remained subject to her control, was directly intended to discourage and repress manufactures of all kinds, those of woollen goods included. The actual result was that the domestic manufacture of coarser, or so called "home-made" cloths, became very widely spread and considerable; and the importations of foreign cloths were proportionally small. A society organized within the present state of New York, in 1765, repudiated foreign cloths, and adopted various measures for increasing the home manufacture, even to rules requiring that the flesh of sheep and lambs should not be eaten, nor the animals slaughtered for such purpose by the butcher. The supply of wool appears to have been large, and it was mostly worked up and disposed of within the colonies. The immigration more or less constantly of weavers and cloth workers from England and other countries, many thousands of whom are said to have come over about the year 1774, would necessarily tend to promote and improve the domestic manufacture, and gradually lead to the investing of capital in small mills or manufactories in various localities; but it is to be regretted that the labor requisite to collect the facts relative to the early growth of the woollen business in this country, and to determine the seats of the first or first successful enterprises in this direction, has not yet been given to the subject; so that, as in the case of American wool raising also, a very large amount of information that could not fail to be of great interest remains scattered in the original sources, and as yet inaccessible. The report of Alexander Hamilton on manufactures, in 1791, speaks of a mill for cloths and cassimeres as in operation at Hartford, Conn., but conveys a doubt whether American wool was suitable for fine cloths. The census of 1810, without making it evident that there was within the state at the time a single woollen manufactory, gives for New York the number of looms (largely in private hands) as 33,068, with 413 carding machines, 427 fulling mills, and 26 cotton manufactories. The following is a view of the various products of domestic manufactures for the state by the same returns:

Articles made in families.	Yards.	Value.
Woollen goods	3,257,812	$2,850,585
Cotton "	216,013	69,124
Flaxen "	5,372,645	2,014,741
Tow cloths	21,721	6,516
Mixed and other stuffs	180,659	63,230

The total value of woollen manufactures for the United States in the same year was estimated at $25,608,788. From this time the domestic manufacture seems to have fallen off rapidly, and the succeeding census returns must be taken as indicating mainly the production of the now growing factories. The total value of woollen goods returned in 1820 was $4,413,068; in 1830, $14,528,166; in 1840, $20,696,999; in 1850, $43,207,545; and in 1860, $68,865,963. For general statistics of the manufactures of woollen goods in this country, as shown by the censuses of 1850 and 1860, see tables under UNITED STATES, vol. xv. pp. 796–'7. In the year 1855 the state censuses of Massachusetts and New York respectively return the wool used at 21,667,272 and 15,325,283 lbs.; the latter giving also 348,000 lbs. of shoddy. Among the products from this wool in Massachusetts were: of broadcloth, 759,627 yards; cassimeres, 6,444,585 yards; satinets, 6,736,082 yards; flannels and blankets, 10,279,227 yards; in New York: cloths, 4,836,834 yards; shawls, 188,000; blankets, 48,000 pairs. The production of cloths in this country, especially of the finer, labors under at least the disadvantage of a very earnest competition on the part of English, Belgian, and French manufactures. Until the year 1840 a very great proportion of the cloths imported were of English make; since that time the superior dye and finish of French and German cloths have led to their importation to an extent relatively much greater than before. But as a result of the competition of those nations, in connection with the fact that American growers have not yet deemed it profitable, or perhaps practicable, to produce the finest wools, the manufacture here of broadcloth appears, according to replies received by Mr. Randall to the inquiry (Jan. 1862), to have been for the present entirely discontinued. The estimated value of woollen goods (worsteds included) imported into the United States, though fluctuating considerably in the intervening years, was in 1821, $7,437,737; in 1831, $12,627,229; in 1841, $11,001,939; in 1851, $19,507,309; and in 1861, $28,487,166. The statement from which the last three results given are selected, prepared by Mr. Gillet, former register of the treasury, acknowledges for the period involved, 1841–'61, no exports from the United States of woollen goods manufactured here. II. *Processes of Woollen Manufacture.* If a piece of superfine broadcloth, as requiring in succession all the operations upon the wool, yarn, and fabric needful for woollens of any sort, be taken as the representative of the whole class, then the following are the processes through which, and in the order given, the materials are passed: 1, sorting the wool; 2, scouring; 3, washing; 4, drying; 5, dyeing (when dyed in the wool); 6, willying; 7, picking or teasing; 8, moating; 9, oiling; 10, scribbling; 11, plucking; 12, carding; 13, slubbing; 14, spinning; 15, reeling; 16, warping; 17, beaming; 18, singeing, sizing, and other preparation of the threads for—19, weaving; 20, scouring; 21, dyeing (when dyed in the piece); 22, drying or tentering; 23, burling; 24, milling or fulling; 25, scouring; 26, drying, or tentering, again; 27, raising, dressing, or teasling; 28, shearing; 29, boiling; 30, brushing; 31, picking; 32, drawing and marking; 33, pressing; 34, steaming; 35, folding or packing. The shearing and pressing are sometimes repeated, the processes of picking, drawing, and marking then coming between them on this second application. Of these multifarious processes, more than one half of which are now effected by machinery, some have already been considered in separate articles. (See CARDS, DYEING, and for the processes numbered 16–19 inclusive, WEAVING; see also FULLING, and TEASEL.) Of the remaining processes, some are too simple to require particular description. The sorting of the wool, as determining the different qualities that shall be mixed for a given quality of cloth, is important. The qualities to be considered in this sorting are chiefly those of fineness, softness, trueness, strength, color, cleanness, and weight, as previously explained. In the English factories, the usual distinctions are into the grades known as "prime, choice, superhead, head, downrights, seconds, fine abb, coarse abb, livery, and breech." In the United States, the grades already named as made by the merchants are at the factories again subdivided each into a definite number of sorts, presenting a regular gradation of quality. After sorting, the several packs of wool are separately scoured, washed, and dried. The scouring is effected by soaking the wool in stale urine, or in an alkaline lye heated to 120°; the washing, by placing the wool, after removal from the lye, within wire baskets in running water, or by rinsing in warm suds, and afterward in clean water; and the drying is much facilitated by subjecting the rinsed wool to pressure in passing it between iron rollers. If the cloth is not to be white, it is either wool-dyed or piece-dyed. If the former, the dyeing follows directly on the scouring or washing. Common colors, as browns and olives, are dyed by the larger manufacturers; but the true colors, as blue, black, and green, and those of all cloths of the smaller manufactories, are left to the special dyers. The process of willying or twillying (a term probably derived from winnowing) is analogous to that of batting or scutching in cotton manufacture; the object is to disentangle and open the locks, and free them of sand or other loose impurities. One of the best forms of willy is that in which a hollow truncated cone, with 4 bars projected beyond but running parallel to its surfaces, and armed with iron spikes, revolves 300 to 400 times per minute within an outer cylinder, armed on the inside with similar spikes. The wool, fed to the smaller end of the cone by an endless apron, travels in revolving by virtue of centrifugal force to the larger; and after being thus opened and beaten up, it escapes into a wire cylinder or receptacle provided with a fan, which blows away the disengaged dust, and finally lays the cleaned wool upon another apron in a continuous sheet. Coarser wools for cloths are willied more than once, sometimes before dyeing, and again after oiling and scribbling. Some larger impurities, such as the willy does not remove, as burs, pitch, or dirt, are then picked out of the wool while spread upon a wire screen, by boys or women; this includes both the picking and moating, the persons engaged being called wool moaters. The wool is then spread upon a floor, sprinkled with olive oil, and well beaten with staves. It is thus prepared for the scribbling machine, the purpose of which is further to open and cleanse the fibres. This process is really a coarser carding, effected by passing the wool successively between several cylinders studded with rows of teeth or wires, and made to revolve rapidly; the wool is conveyed to the cylinders by an apron, and given forth at the last in a delicate sheet, which is wound on a revolving roller. This operation also may be repeated 2 or 3 times. From the carding machine, through which the wool is afterward passed, it is delivered in the form of slender cylinders or pipes, called cardings. Slubbing, which is a preparatory spinning, is performed by the slubbing billy, and consists in drawing out and twisting the cardings, to the state of a soft, weak thread. This is effected by means of several spindles set nearly upright in a frame, and receiving a turning motion, at the same time that the frame itself is made to recede (upon friction wheels running in rails beneath it) from a roller facing the spindles, and from which roller a carding is fed by the machinery to each spindle at the rate required; the spindles alternately draw out and wind the lengths of thread produced by movement of the carriage, the entire action being quite similar to that of Hargreaves's spinning jenny. (See COTTON MANUFACTURE.) Beside the workman managing the machine, another, or a child, is employed to put fresh cardings in place as they may be required. The proper spinning consists in bringing the soft yarn thus furnished to the fineness and firmness requisite for weaving; and the machinery and operation are again quite similar to those employed in spinning cotton. In view, however, of the variable lengths of the filaments of wool, the two pairs of drawing rollers between which it passes in spinning are so mounted as to be adjustable at different distances, so as neither to allow the soft thread to part between them from its undue length, nor to be broken when too short because of want of space for the fibres to slip one upon the other; while the greater elasticity of wool also allows the velocities of the two pairs of rollers to be so regulated as to produce a greater extension of the thread than in the case of cotton. After the preparation for and the process of weaving, follows that of scouring the cloth, in order to remove the oil, sizing, dust, &c., introduced into it purposely or accidentally in the mean time; this is accomplished by beating the cloth with wooden mallets moved by machinery, while it lies in a sort of inclined trough—soap and water being first allowed to flow upon it, and afterward clear water. Piece-dyeing and washing may then follow; otherwise, the cloth is next removed to the drying room, or stretched in the open air by means of hooks upon rails or tenter bars, and allowed to dry. Being removed when dry to a suitable room, the operation of burling follows, the burlers picking out of it irregular threads, hairs, and dirt; and the process of fulling then succeeds. (See FULLING.) After the cloth has been fulled one or more times, as may be required, it is again subjected to scouring, fullers' earth being now usually added to the water; and after rinsing, the cloth is again stretched upon the tenters and dried. The cloth in the fulled state has both its surfaces woolly or rough; and that surface which forms the proper face of the cloth, or either one of them if they do not differ, is then subjected to the operations of teasling and shearing. The object of the former process is to raise a sufficient number of fibres upon the surface, and of the latter to cut these to the proper length to form the pile or nap of the finished cloth. To the old plan of fixing the teasels in a hand frame worked over the piece by two men, succeeded some years since that of the gig mill, in which the teasels are set in the periphery of a cylinder; and in the most improved form of this, the teasels are arranged along longitudinal bars in the surface of the large cylinder, with interspaces between the bars, the whole having the appearance of an immense reel. The cylinder revolves rapidly, while the cloth, passing slowly from one roller to another, is brought against one side of it, and receives the action of the teasels. Owing to the readiness with which the points of the burs soften when wet, and their comparative scarcity and high price, gig mills with what are called metallic teasels, or cards with fine metallic teeth, have recently been constructed; but though some of these perform satisfactorily, the natural teasels are still preferred. Of these, 3,000 are not unfrequently consumed in dressing a single piece of cloth. The shearing of the nap thus raised to a proper and uniform length was, until the beginning of this century, performed by stretching the cloth over a stuffed table, and carefully clipping it with long hand shears; in the first mechanism the only change was in working similar shears by the machinery; but at present several more ingenious modes have been devised. Among the best of these is that invented by Mr. George Oldland, of Gloucestershire, in 1832. In this, the cloth, being made to move slowly along in a horizontal sheet, is passed directly beneath and in contact with a semicircular cutting edge or "ledger blade," extending across the width of the piece, while directly within this semicircle there is continually turned by a band from the machinery a revolving wheel fitting the curve of the former, and at once carrying and by suitable arrangements of teeth causing to revolve 8 small circular cutters about its periphery; as these are thus made successively to play along the ledger blade, they form a sort of endless shears in the highest degree delicate and true. Superfine cloths are dressed and sheared several times in succession, being also once pressed before the last shearing. In the intervals of the preceding operations, or after their completion, the best cloths are now boiled, or "roll-boiled," being wound tightly round a cylinder and immersed for 2 or 3 hours in scalding water. The results of this process, patented by Messrs. Daniell and Wilkins, of Tiverton, in 1824, and improved by Mr. William Hirst, of Leeds, are to prevent spotting of the cloth when used, and to impart to it a lustre which was unattainable by any previous process. Other methods, as that of steaming the cloth while stretched or under pressure, though shorter, are said to be less advantageous. Brushing the cloth, which in any case next follows, is effected by passing the piece, while steamed, in contact with revolving cylinders studded with suitable brushes. Picking is then performed, to remove blemishes; and fine-drawing, to close any minute breaks in the fabric; and the usual trade marks, denoting quality, number, &c., are then worked in at one end of the piece. The brushing is then again performed, and the piece folded is subjected between polished pressing boards to the action of a hydraulic press. A deceptive gloss may be produced in inferior cloths, by hot-pressing by means of heating the iron plates; and in any case, with or without a final steaming and drying, the cloth is then folded and packed for sale. Such is a general description of the nature and order of the operations required in converting wool in the fleece into marketable cloths; though some of the less essential of these may not enter into the preparation of all the species of woollen goods, and in particular instances other slight deviations from the usual order beside those already named may occur. It would be impracticable to describe or enumerate the many minor changes or improvements connected especially with the working of the wool previous to carding, with the operation of spinning, and with those to which the cloth is subjected, and of which taken together a great number are every year patented, and many of them introduced into use, not only in this country and in England, but also in countries of continental Europe. It may be mentioned, however, that in 1858 Mr. Archibald, of Tillicoultry, Scotland, introduced a machine for piecing the cardings, so as to form them into a continuous length or roving; and that very recently also, Messrs. Tolson and Irving, of England, have patented a curious process for imparting to woollen cloths a metallic lustre—the yarn or piece being impregnated with a salt of copper, lead, or bismuth, and the metal being then disengaged and left upon the fibre by exposure to steam charged with sulphuretted hydrogen. In the United States, in 1858, Mr. Waterman Smith, of New Hampshire, patented mechanism for keeping the soft woollen thread or sliver of other fibrous materials hot while being drawn, by passing it over or against heated surfaces, the objects being to render the fibres more soft and pliable than otherwise, and to straighten and elongate them in drawing; and Messrs. Kennedy and Plummer, of Connecticut, in the same year obtained a patent for a novel combination of tubes and drawing rollers, and means of working the rollers, by which the processes of drawing and twisting can be performed simultaneously, or either of them separately, and in consequence of which, when the two actions are combined, it is claimed that great convenience is secured, in the way of varying the relative degrees of draught and twist, to suit various lengths and quantities of fibre. Among woollen goods proper are broadcloths and narrow cloths, cassimeres (or kerseymeres), and beaver or double cloth, the last named of which, coarse and warm on one side, and presenting a finely finished surface on the other, was also the invention of Daniell and Wilkins, in 1838. III. *Processes of Worsted Manufacture.* The object in view in preparing the long wools for manufacture is not to produce that thorough interlacing of fibres which is completed in fulling, but rather to produce a simply spun and woven fabric. The chief preparation of the wool accordingly consists in obtaining the fibres in a straight and parallel condition; and this is effected by combing. The combing wools are themselves subdivided into the long and the short—the former, of lengths varying from 6 to 12 inches, being chiefly used for carpets and other coarser goods; the latter, of lengths from 4 to 7 inches, for hosiery, merinos, &c. The principal processes are: 1, sorting; 2, scouring; 3, drying; 4, plucking; 5 (for certain fabrics only), carding; 6, combing; 7, breaking; 8, drawing; 9, roving; 10, spinning; 11, reeling; 12, weaving; 13, dyeing, &c. The wool may be scoured, and mainly dried by passing between rollers; but by the washing machine of Messrs. Petrie and Taylor, both the scouring and drying are more speedily and effectually performed. The wool, in this, is rapidly agitated in hot suds in an iron trough by iron rakes; and being then drawn from the trough by a cylinder with metallic teeth, it is briskly winnowed until dry. Plucking is performed by passing the wool through a machine in which spiked rollers beat up and separate the fibres. The combing of the wool is still performed by hand in some instances, though now more commonly by machinery. In hand combing, the workman uses as required either of two pairs of combs, one having 3, the other 2 rows of long teeth; the rows in either case, from the outermost inward, growing successively shorter. The handle is set into the head of each comb at right angles to the direction of the teeth; and by means of holes, one vertically through the handle, the other entering it at the end, and of corresponding pins projecting from a comb post near the workman, and upon which the handle is to be fixed, the comb can be steadied when required. Near to each workman is also a comb pot, or stove. The teeth of the combs are placed in an opening in the top of the stove long enough to heat them. The workman meanwhile takes about 4 ounces of wool, sprinkles it with olive oil, and thoroughly rubs this through it with his hands. One of the heated combs, and after it the other, is affixed upon the comb post; among the teeth of each of them in succession the comber jerks or "lashes" one half the wool; and as each is thus charged he returns it, teeth and wool downward, into the heated space in the stove. When the wool is properly warmed, seating himself on a low stool, he holds one comb with the teeth upward by his left hand over his knees, and with the right hand works the other comb, the teeth of which point downward; and he continues this operation, using the teeth of either comb to straighten the wool on the other, and thus working through the wool from the outermost portions until the combs nearly meet. The fibres of the greater part of this quantity of wool are thus properly straightened, and such portion is fitted for spinning into worsted; the small portion remaining on the combs, and called the "noils," is applied to other purposes, being usually mixed with the wool for certain cloths. The wool then undergoes recombing at a lower temperature, the straightened portion being meantime collected into 10 parcels or slivers, which are ready for breaking. The machines that have been devised for wool combing are already very numerous. The first of these, that of Cartwright (1790), attempted, by means of a circular comb and of a cylindrical working comb and an oscillating frame moving over the former, to imitate closely the process of combing by hand. The machine which first succeeded in displacing this was that of Platt and Collier (1827); in this, two wheels studded about their peripheries with teeth parallel with their axes, forming circular combs, have their disks set crossing at a slight angle with each other, and almost in contact by their near edges. A boy is employed to strike the wool upon the teeth of one comb, and the wheels being at the proper distance, and rotating, the teeth of the empty wheel draw through or comb the wool upon the charged one. When the combing is completed, the "top" or combed worsted is taken off by a boy or girl in a continuous sliver; and by another boy the noils or uncombed part are removed. In improved forms of this machine, the wool having been sufficiently combed, and now equally distributed on both wheels, the rotation of these is discontinued, and the top is disengaged from both of them while turned slowly, by the action of pairs of small rollers between which it is passed. For more detailed accounts of the principal combing machines in use at the time of its publication, see James's "History of the Worsted Manufacture" (London, 1851). Breaking, which follows next in order after combing, is performed by the breaking frame, the object of which is to open out fibres that may have escaped the combs. In this, the sliver passed between rollers is again acted upon by the teeth of a sort of endless comb, the relative velocities of the two being so regulated that the sliver is extended as well as combed; the smaller roll or sliver thus obtained is wound continuously upon a cylinder, from which it is passed to a second breaking frame with finer teeth. The sliver is afterward subjected to the action of a machine similar to the drawing frame of the cotton manufacture; and it is thus further extended and equalized. The sliver, now greatly reduced, but as yet untwisted, is then brought to the roving machine, in which it is passed successively between two pairs of small rollers, the second pair moving the more rapidly, so as to draw it out in length, while at the same time it is slightly twisted by a turning movement of the hollow bobbin or fly through which the thread is drawn. The spinning, which follows this process, is conducted in much the same way as in the case of cotton manufacture; and this, with the remaining operations to which the yarn and cloth are subjected, do not require especial mention. The worsted yarn is reeled in hanks of 560 yards each; and these are named according to the number of them that make a pound, as No. 24, and so on. The worsted manufactures of England have now for many years been gaining upon those of woollens; among the causes of this change being, that the wool of the country has deteriorated in fineness and felting capacity; that the improvements in machinery have greatly facilitated the combing of the wool, and even of that having a shorter fibre than could formerly be worked in this way; that the fly-spindles in the preparation of the yarn, instead of about 2,800 as formerly, can now be made to perform 6,000 revolutions per minute; that while broadcloths, often 9 feet in width before fulling, cannot be woven at more than about 50 movements of the shuttle per minute, certain worsted goods are woven at the rate of 160; and that the facility of working cotton into worsted fabrics is now very great. It is supposed that 95 per cent. of the worsteds worked in the Bradford district have cotton warps, and that of their total weight at least one third is cotton. Among styles of worsted goods which have been or are now well known are blankets, flannels, stuffs, merinos, muslin-de-laines, bombazines, shalloons, says, moreens, camlets, lastings, baize, &c. (See also CARPET, and STOCKING.)—In connection with the subjects of wool and its manufacture, the reader is referred to "Sheep Husbandry," &c., by Henry S. Randall, LL.D. (New York, 1860), and to "Fine Wool Sheep Husbandry," by the same author (New York, 1862); as also to James's "History of the Worsted Manufacture," above mentioned.

WOOL, JOHN ELLIS, an American general, born in Newburg, N. Y., in 1789. He received but a scanty education, and before he had reached the age of manhood became proprietor of a bookstore in Troy. His property being consumed by fire, he turned his attention to the law, but his studies were interrupted by the war with Great Britain in 1812, when, through the friendship of Governor De Witt Clinton, he obtained a commission as captain in the 13th infantry. His first active service was at the storming of Queenstown heights, Oct. 13, where he was shot through both thighs, and was promoted to be major in the 29th infantry. He was in the battles of Plattsburg, Sept. 6–11, 1814, and for his gallantry in the action at Beekmantown was brevetted lieutenant-colonel. On the reduction of the army at the end of the war he was retained in the 6th infantry; in 1816 was appointed inspector-general of the northern division; in 1818 lieutenant-colonel; in 1821 inspector-general of the whole army;

and in 1826 brevet brigadier-general for 10 years' faithful service. In 1832 the government sent him to Europe to examine the military systems of some of the principal nations. He was received with marked civility in France, especially by the king and the minister of war, Marshal Soult, and thence went to Belgium, where he was the guest of the king, and was present at the siege of Antwerp. For a year or two after his return he was employed in inspecting all the coast defences from Maine to the delta of the Mississippi; in 1836 he was charged with removing the Cherokee Indians to Arkansas; and in 1838, during the Canadian difficulties, he made a reconnoissance through the wilds of northern Maine, with a view to the defence of the frontier. He obtained the full rank of brigadier-general, June 25, 1841. At the commencement of the Mexican war he was ordered to the West to organize the volunteers (May 30, 1846), and in less than 6 weeks had despatched to the seat of war 12,000 troops fully armed and equipped. He then collected 3,000 troops at San Antonio de Bexar under his personal command, crossed the Rio Grande Oct. 8, and reached Saltillo after a march of 900 miles, having lost hardly a man, and preserving such admirable discipline in his army as to gain the general good will of the inhabitants. He selected the ground on which was fought the battle of Buena Vista (Feb. 23, 1847), made the preliminary dispositions, and commanded in the early part of the action until the arrival of Gen. Taylor, who in his official report of the victory attributes a large share of the success to Gen. Wool's "vigilance and arduous services before the action, and his gallantry and activity on the field." For his conduct on this occasion Gen. Wool was brevetted a major-general in 1848. He remained in command at Saltillo until Nov. 25, 1847, when on the return of Gen. Taylor to the United States he succeeded to the command of the army of occupation, and retained it until the conclusion of the war, his head-quarters being at Monterey. In this capacity the civil as well as military authority throughout the states of New Leon, Coahuila, and Tamaulipas devolved upon him. He cleared the country of robbers and guerillas, and in Monterey, according to an eye witness, enforced more perfect order than was to be found in any city of the United States. After his return home in July, 1848, he commanded the eastern military division, with his head-quarters at Troy, until the reorganization of the commands in Oct. 1853, when he was placed at the head of the department of the East, with his head-quarters at Baltimore. In Jan. 1854, he received the thanks of congress and the presentation of a sword for his services in Mexico. In the same month he was transferred to the department of the Pacific, with instructions from the secretary of war, Jefferson Davis, to "use all proper means to detect the fitting out of armed expeditions against countries with which the United States are at peace," and to coöperate with the civil authorities "in maintaining the neutrality laws." Executing these orders literally, Gen. Wool incurred the displeasure of the secretary, who prevented his further compliance with his instructions by removing the head-quarters of the department from San Francisco to the inland town of Benicia. The correspondence between the general and Secretary Davis was published by order of congress in 1858. In 1856 Gen. Wool put an end to the Indian disturbances in Washington and Oregon territories, in a campaign of 3 months. At the close of President Pierce's administration he was recalled to the department of the East, with his head-quarters at Troy. When civil war was imminent toward the close of 1860, he hastened to offer his services to the government, and after the attack upon Fort Sumter went to New York to organize, equip, and send on to Washington the first regiments of volunteers. He took the responsibility of reënforcing Col. Dimick at Fortress Monroe, thus saving that important post from danger of seizure by the confederates. About May 1 he was ordered to return to Troy. In August he was sent to Fortress Monroe as commander of the department of Virginia, and from that post led an expedition which occupied Norfolk, May 10, 1862. On June 2 he was transferred to the command of the middle department, with his head-quarters at Baltimore. He was promoted to be full major-general in the regular army, May 16, 1862.

WOOLLETT, William, an English engraver, born in Maidstone, Kent, in 1735, died May 23, 1785. He was instructed in his art by an obscure artist named Tinney. He engraved historical subjects and portraits, but was most successful in landscapes, in which he exhibited such varied excellences as, in the opinion of Longhi, to entitle him to be considered "the marvel and the example for all contemporary engravers and for those of the present time." His masterpieces are his "Niobe" and other plates after pictures by Richard Wilson, and the "Death of Wolfe" and the "Battle of La Hogue" after West. He was the first who conceived and embodied in practice the idea of uniting in one plate the three methods of engraving, by aquafortis, the burin, and the dry needle. Genuine impressions from Woollett's plates are exceedingly valuable, as he permitted no imperfect prints to be struck off.

WOOLMAN, John, an American Quaker preacher, born in Northampton, Burlington co., N. J., in 1720, died in York, England, in 1773. At the age of 21 he became a speaker in the meetings of the society of Friends. He was at this time a bookkeeper in a mercantile house, but, preferring a quieter life, learned the tailor's trade. In 1746, in company with Isaac Andrews, he made his first itinerating tour in some of the back settlements of Virginia, and from that time continued at intervals to visit the societies of Friends in the different portions of the colonies. In 1763 he visited the Indians at

Wyoming and elsewhere on the East branch of the Susquehanna, and about 1772 visited England. From religious scruples as to the ornamentation of the cabin, he took passage in the steerage, and after his arrival in England refused for a similar reason to ride in the stage coaches, or to send or receive letters by post. His published works are: "The Journal of the Life and Travels of John Woolman in the Service of the Gospel," which has passed through many editions; "Some Considerations on the Keeping of Negroes" (1753); "Considerations on Pure Wisdom and Human Policy, on Labor, on Schools, and on the Right Use of the Lord's outward Gifts" (1768); "Considerations on the True Harmony of Mankind" (1770); "An Epistle to the Quarterly and Monthly Meetings of Friends" (1772); "Remarks on sundry Subjects" (1773); and "A Word of Remembrance and Caution to the Rich."

WOOLSACK, the seat of the lord chancellor of England in the house of lords, when acting as presiding officer of that body. It is a square bag of wool, without back or arms, covered with red cloth, and was originally intended to be emblematic of the fact that wool was the great staple production of England.

WOOLSEY, Melancthon Taylor, an officer of the United States navy, born in the state of New York in 1782, died.in 1838. He entered the navy as a midshipman in 1800, and served in that grade on the West India station in the Adams (28), Capt. Valentine Morris, and in the Boston (28), Essex (32), and Constitution (44), in the Mediterranean. In Feb. 1807, he was promoted to be lieutenant, and in 1808, when the relations between England and the United States menaced war, was selected to superintend the construction and equipment of the first regular naval armament made upon the lakes. He repaired to Oswego for that purpose, and was employed upon the lakes throughout the war. In 1813 he was promoted to the rank of master commandant (now commander), and in 1817 to that of captain. His later services were in command of the Constellation (36) in the West Indies in 1825-'6, of the navy yard at Pensacola in 1826-'7, and of a squadron on the coast of Brazil.

WOOLSEY, Theodore Dwight, D.D., LL.D., an American scholar, ninth president of Yale college, born in New York, Oct. 31, 1801. He was graduated at Yale college in 1820, studied theology at Princeton between 1821 and 1823, and from 1823 to 1825 was tutor in Yale college. In the last named year he was licensed to preach. In 1827-'30 and in 1845 he visited Europe. In 1831 he was appointed professor of Greek in Yale college, and in 1846 was chosen president of that institution, and he also instructs in history and political science. At the time of his inauguration he was ordained. He has prepared several text books for instruction in Greek, viz.: "The Alcestis of Euripides" (1833; revised, 1837 and 1841); "The Antigone of Sophocles" (1835; revised, 1840 and 1851), "The Electra of Sophocles" (1837; revised, 1841 and 1852); "The Prometheus of Æschylus" (1837· revised, 1841 and 1849); and "The Gorgias of Plato" (1842; 2d ed., 1848). In 1860 he published an "Introduction to the Study of International Law" (12mo., Boston). He has also printed various occasional sermons and discourses, and has been a frequent contributor to the quarterly periodicals, especially to the "New Englander." He received the degree of LL.D. from the Wesleyan university in 1845, and of D.D. from Harvard college in 1847. He has been an active member of the American oriental society, of which he is a vice-president; and in 1862 he succeeded President Felton as a regent of the Smithsonian institution.

WOOLSTON, Thomas, an English theological writer, born in Northampton in 1669, died Jan. 27, 1733. He was educated at Cambridge, where he became a fellow of Sidney Sussex college, and received holy orders. In his "Old Apology for the Truth of the Christian Religion against the Jews and Gentiles revived" (1705), he essayed to prove that all the actions of Moses were typical of Christ and his church. In 1720 he published a Latin dissertation on the supposed letter of Pontius Pilate to Tiberius, and two Latin tracts in defence of Origen's allegorical interpretation of the Scriptures. He carried his fondness for this system of interpretation so far as to deny the reality of the miracles of Christ, for which a prosecution was instituted against him by the attorney-general, but Whiston and others made interest to have it stayed. In 1727-'30 Mr. Woolston published six "Discourses on the Miracles of Christ," which gave rise to a violent controversy, and caused him to be convicted of blasphemy at Guildhall, and sentenced to a year's imprisonment and a fine of £100. At the end of the year, not being able to pay the fine, he purchased the liberty of the rules of the king's bench, within which he died. He would probably have been released, but he refused to give security not to offend again. Beside the works above mentioned, he wrote a number of tracts against the clergy.

WOOLWICH, a town of Kent, England, situated on the right bank of the Thames, 8 m. below London bridge, on the N. Kent railway; pop. in 1851, 32,367. It stands principally on elevated ground close to the river, with marshes to the E. and W. which are sometimes flooded. There are several churches and charitable institutions, a town hall, a mechanics' institute, and numerous schools. The greater part of the population is dependent for support upon the government dock yard and arsenal. The dock yard, which is one of the oldest in Great Britain, has extensive basins and dry docks, and founderies and machine shops with every appliance for constructing machinery and boilers. The royal arsenal is situated on the E. side of the town, and covers more than 100 acres. It is the principal depot of artillery and various munitions of war for both the navy and army.

It contains founderies and factories for the manufacture of warlike stores, magazines, a model room with a pattern of every article used in the artillery service, immense quantities of shot and shell, extensive barracks, and a practising ground attached, which is nearly 3 m. in range. The government ordnance is all proved at Woolwich. About 1,000 convicts are usually employed as laborers upon the public works, and hulks are moored in the river for their confinement when not at work. The garrison consists of artillery, sappers and miners, and marines, and usually amounts to about 3,500 men. An academy for educating military officers, more particularly for the artillery and engineers, was founded at Woolwich in 1719. The sons of officers are admitted upon a scale which varies with the father's rank, and ranges from £20 to £80 per annum; while the charge for the sons of civilians is £125. The number of cadets in attendance is from 150 to 170, and each receives an annual allowance of £45 12*s.* 6*d.*, and the choice of commissions in different branches of the service according to proficiency and merit. An observatory for the use of the officers has lately been erected. Woolwich unites with Greenwich and Deptford, under the name of the borough of Greenwich, in returning two members to parliament.

WOONSOCKET, a village, or rather a group of villages, lying on both sides of the Blackstone river, in the townships of Smithfield and Cumberland, Providence co., R. I., 16 m. by railroad N. W. from Providence. There are 5 villages comprised under the general name of Woonsocket, viz., Woonsocket, Bernon, Hamlet, Jenckesville, and Globe; pop. in 1860, 7,000. The villages contain 19 cotton mills, 4 woollen mills, 3 machine shops, one iron foundery, a gas manufactory, one stocking factory, one of musical instruments, and 2 of scythe stones, of which there is a large quarry in the immediate vicinity. The value of merchandise manufactured in the villages annually is about $2,000,000. Woonsocket has 6 churches, a high school, one newspaper office, 6 banks, and 3 savings institutions. It has direct railroad connection with Providence, Worcester, and Boston.

WOORARA, WOORARI, WOURALI, CURARI, or URARI, the name of several powerful poisons prepared by the natives of Para, Brazil, and the interior of British Guiana, and used by them for tipping the points of weapons employed in war and in hunting. Their real nature and origin are still not definitely known. The poison of the better known variety of woorara takes effect through the blood, primarily on the nervous centres of motion, but most rapidly and powerfully of all on that controlling respiration; hence, it occasions general paralysis, but proves fatal in reality through cessation of the action of the lungs. Its influence is one of depression, and it is by some authorities affirmed to be the most potent sedative known; but its action is said to be attended sometimes with convulsive movements. Animals treated with it are speedily paralyzed, fall into a stupor, and die in a few minutes. The heart, however, is found to continue its action for some time after respiration has ceased; and in many instances of this sort, artificial respiration being resorted to before the heart ceased to act, and being sufficiently prolonged to allow of exhalation or excretion of the poison, the animal is revived and completely recovers. In case of death, no alteration is discoverable in the blood or the solid tissues. One of the most widely accepted accounts of the woorara is that given by Sir R. H. Schomburgk, and asserted by him to be derived from information by the natives as well as observation; this is to the effect that the principal ingredient is the juice of a tree or shrub of the same genus with that yielding nux vomica, and for which accordingly he proposes the name *strychnos toxifera.* So far as it concerns the nature of the poison, however, this explanation must be abandoned; since not only have chemists universally failed to detect the alkaloid strychnine in specimens of the poison they have analyzed, but its effects are directly the opposite of those of strychnine, the latter being one of the most powerful excitants of muscular movements. Like the poison of venomous serpents, woorara taken into the stomach is, at least in a large proportion of instances, entirely inert and harmless; though whether because difficult of absorption through the mucous membranes, or because changed by action of the gastric juice, is not known. Dr. J. W. Green ("American Medical Gazette," vol. vi. p. 299) states that, taken by animals in large quantity and in an empty state of the stomach, it has caused death. The comparative harmlessness of the poison when swallowed has given much currency to the opinion of Dr. Brainard, that its chief ingredient is the venom of serpents. This supposition is, however, directly contradicted by the facts that the poison neither alters the character of the blood, nor excites inflammation in the wound through which it finds its way into the circulation. MM. Pelouze and Bernard found it to be absorbed as readily through the membrane of the air cells as when introduced into the areolar tissue. The account of Dr. Hancock, said also to be derived from information by the natives, makes the woorara a watery extract from the bark of a convolvulus or gourd-like plant. Mr. Charles Waterton, in his "Wanderings in South America" (London, 1836), enumerates as the sources of the woorara poison a vine having the name, with a root of very bitter taste, two gourd-like plants, two species of venomous ants, pepper, and the fangs of two sorts of poisonous serpents. From these is obtained a mixture having the appearance of a thick sirup of brown color, with which the arrows or darts to be poisoned are anointed two or more times. The flesh of game killed with these arrows may be eaten at once with impunity. Drs.

Brainard and Green have asserted, that if woorara be mixed before insertion with a solution of iodine and iodide of potassium, or if these be introduced into a wound immediately after it, the action of the poison is wholly neutralized; and a like power has been ascribed to bromine and chlorine; but in M. Pelikan's experiments, the former substances did not neutralize the poison.—The attempts made to isolate the active principle of woorara have not, it would appear, been wholly satisfactory. Dr. Heintz obtained the poison in a more highly concentrated form; and Boussingault and Roulin believed that they had separated the active principle, which they named curarine. This appears to be an alkaloid, and is intensely bitter; but neither it nor its salts crystallize.—The peculiar action of woorara, in paralyzing the nervous centres of motion, that of respiration included, has naturally suggested that this agent and strychnine must prove to be respectively antidotes of each other; and this opinion seems likely to be confirmed. M. Pelikan asserts that if strychnine and woorara be both introduced at the same time into the circulation, neither can produce its peculiar effects except where the dose of the other is insufficient—the woorara relaxing the convulsive action of the muscles occasioned by strychnine. By like reasoning, it has been proposed to employ woorara as a remedy in tetanus (locked jaw) and hydrophobia; and it is asserted that actual experiments have shown its beneficial effects in the former disease. Mr. Sewall inoculated with woorara a horse suffering under tetanus. Apparent death followed in 10 minutes, and the animal being then revived by artificial respiration, the spasms did not recur; but the horse died the next day, it was supposed, from over-eating. Mr. W. Ley ("Provincial Medical Journal," 1842-'3) has recommended the extract of the Indian hemp (*cannabis Indicus*) also as an antidote for woorara.—Drs. Hammond and Mitchell ("American Journal of Medical Science," July, 1859) give the results of their examination of two less known varieties of arrow poison, called *corroval* and *vao* or *bao*. The first of these, as preserved, is in brownish black lumps, and intensely bitter; an alkaloid obtained from it they named *corrovalia*. The second was a perfectly hard, dark brown extract. Both dissolved alike in water and alcohol, and produced a like effect, though that of vao was less powerful. This effect was quite opposite to that of woorara, though like it exerted through the blood; it is that of paralyzing the heart, while the respiration continues; and secondarily it paralyzes both sensibility and general motion, but from the extremities of the nerves toward the centres. Both these poisons they believe to be vegetable, but no strychnine was found in them. There appeared to be no antidote for them.—The Indians of Para and other parts of South America tip with woorara arrows 15 to 18 inches long, which they then discharge by blowing them from a long slender tube or blow-pipe, called *gravatana*. The arrows are notched, so as to break off in the wound; and by winding a cotton-like material about them they are made to fit the tube, which is of reed, and may be 8 or 12 feet long. In Peru, arrows only 1½ to 2 inches long are used, and the poison is of a different sort. An accidental wound with any of these often proves fatal. As the discharge of the arrows is without noise, a hunter may successively bring down many birds or small animals with them, before he proceeds to gather up his game; and in the hands of a practised marksman the weapon is a very deadly one.

WOOSTER, David, a general of the American revolutionary war, born in Stratford, Conn., March 2, 1710, died in Danbury, Conn., May 2, 1777. He was graduated at Yale college in 1738; and in 1739, when the war broke out between England and Spain, he entered the provincial army as lieutenant, and was subsequently made captain of a vessel built and equipped by the colony for the defence of its coasts. In 1745 he was captain in the regiment of Col. Burr, which participated in the expedition against Louisburg, and from that place went in command of a cartel ship to England, where he was received with great favor, and made a captain in the regular service under Sir William Pepperell. In the French war which ended in 1763 he was commissioned by the governor of Connecticut as colonel, and subsequently as brigadier-general, and served during the whole war. In April, 1775, he was one of the members of the assembly of Connecticut who concerted the plan for the seizure of Ticonderoga; and when in June of that year the continental army was organized, he was appointed one of the 8 brigadier-generals. He was engaged in the expedition into Canada, where after the death of Gen. Montgomery he for a time held the chief command. After his recall he resigned and returned to Connecticut, and was major-general of the militia when Tryon invaded that state for the purpose of destroying the military stores at Danbury. He attacked the rear guard of the enemy, April 27, 1777, and while about 2 miles from Ridgefield, as he was rallying and encouraging his men, he was mortally wounded. On June 17 congress voted that a monument should be erected to his memory, but no steps were taken to have the resolution carried into effect. Even the neglected grave was not identified until 1854, on April 27 of which year the corner stone of a monument to his memory was laid, by act of the legislature of Connecticut.

WORCESTER. I. A central co. of Massachusetts, bounded N. by New Hampshire and S. by Rhode Island and Connecticut, and drained by Blackstone, Chicopee, Thames, Quinebaug, Ware, and other rivers; area, 1,500 sq. m.; pop. in 1860, 159,660. It is the largest county in the state. The surface is generally undulating, and the soil fertile and under a high state of cultivation. The productions in 1850 were 476,107 bushels of Indian corn, 297,335 of oats, 733,261 of potatoes, 1,881,823 lbs. of butter, 2,584,245 of cheese, and 145,094 tons of hay. In 1855 there were 3 flouring mills, 77 cotton, 1 linen, 1 carpet, and 47 woollen factories, 30 manufactories of combs, 3 rolling mills, 8 forges, 15 iron founderies, 1 manufactory of steam engines and boilers, 7 of scythes, 8 of edge tools, 3 of cutlery, 8 of agricultural implements, 13 of pianos and other musical instruments, 2 of brushes, 4 of watches and gold and silver ware, 10 of hats and caps, 6 of cordage, 14 of cards, 64 of cars, coaches, wagons, &c., 13 of firearms, 97 of chairs and cabinet ware, 3 of straw bonnets and hats, 17 paper mills, 35 currying establishments, 4 breweries, 1 type and stereotype foundery, 34 tanneries, and 11 newspaper offices. In 1850 there were 205 churches, and 28,058 pupils attending public schools. The county is traversed by the Boston and Worcester, the Providence and Worcester, the Fitchburg and Worcester, the Western, the Worcester and Nashua, the Fitchburg, the Vermont and Massachusetts, the Norwich and Worcester, and the Cheshire railroads. Shire towns, Worcester and Fitchburg. II. A S. E. co. of Maryland, bordering on Delaware and the Atlantic ocean, and bounded W. by the Pocomoke and Nascongo rivers; area, 700 sq. m.; pop. in 1860, 20,661, of whom 3,648 were slaves. It forms part of the peninsula between Chesapeake and Delaware bays, and has a level surface and tolerably fertile soil. The productions in 1850 were 721,768 bushels of Indian corn, 87,798 of oats, 68,039 lbs. of butter, 25,134 of wool, and 13,800 tons of hay. There were 17 grist mills, 17 saw mills, 60 churches, 1 newspaper office, and 1,719 pupils in public schools. Capital, Snow Hill.

WORCESTER, a city and one of the capitals of Worcester co., Mass., 45 m. W. S. W. from Boston; pop. in 1860, 24,960. It is an important railroad centre, being the point of junction of the following 6 lines: the Boston and Worcester, the Western, the Norwich and Worcester, the Providence and Worcester, the Worcester and Nashua, and the Fitchburg and Worcester. The city is situated partly in a valley and partly on the slope of a hill which rises toward the west. It is regularly laid out with wide and pleasant streets. Its principal business thoroughfare, Main street, is a broad straight avenue 2 m. in length, shaded with fine trees. Toward the southern part of this street is a spacious common, near which are several handsome churches. The houses are generally built of brick. There are 6 banks with an aggregate capital of $1,800,000, 3 savings banks, 1 life and 5 fire insurance companies, a loan fund association, a gas company, 2 daily and 3 weekly newspapers, 18 religious societies, and 19 churches. The college of the Holy Cross at Worcester, under the direction of the Jesuits, was founded in 1843, and almost wholly destroyed by fire July 14, 1852, the library being saved. It has since been rebuilt, and in 1862 had 7 professors, 73 students, and 5,000 volumes in the library. The city has an academy, a female collegiate institute, and the Oread institute, a seminary for girls; beside a public high school, 4 grammar schools, and public schools of lower grade. The state lunatic hospital, founded in 1833, is situated here, and in 1862 had 400 patients. The American antiquarian society was founded here in 1812 by Isaiah Thomas; it has a library of about 30,000 volumes and a large and valuable cabinet of antiquities. A free public library, recently established, contains 13,000 volumes. The manufactures of Worcester are varied and extensive. In 1860 cotton goods to the value of $150,000 were manufactured here; satinet and woollen goods, $223,000; cotton, woollen, and other machinery, $500,000; iron castings, $550,000; iron and steel wire, $1,350,000; agricultural implements, $650,000; screw wrenches, $100,000; machine cards, $150,000; envelopes, $75,000; boots and shoes, $135,000; leather curried, $100,000; clothing, $350,000; stoves and tin ware, $70,000; musical instruments, $65,000; carriages, $175,000; soap and candles, $325,000; guns and pistols, $150,000; locomotive tires, car wheels, and railroad iron, $550,000; mechanical tools and iron machinery, $275,000; calico and paper machinery, $200,000; beside numerous other articles. The assessed value of real and personal estate in Worcester in 1852 was $12,575,566; in 1862 it was $16,131,100.—The town was settled in 1713, and incorporated as a city in 1848. Its Indian name was Quinsigamond.

WORCESTER, a town of England, capital of Worcestershire, situated on the left bank of the Severn, 102 m. W. N. W. from London; pop. in 1861, 31,123. The houses are generally built of brick, but some of them are framed with wood, have a very picturesque appearance, and are 2 or 3 centuries old. The cathedral is a large building in the form of a cross, with a central tower rising to the height of 193 feet. Porcelain, iron castings, leather, gloves, hair cloth, and lace are the principal manufactures. The Oxford and Wolverhampton and the Bristol and Birmingham railways have stations here; beside which traffic is facilitated by the river Severn and by the Worcester and Birmingham canal. The trade is chiefly in grain, coal, slate, timber, and manufactured goods.—Worcester was founded by the ancient Britons, and the Romans afterward made it an important station. It was destroyed by the Danes, and rebuilt in 894. After the Norman conquest a castle was built upon a height overlooking the river, a part of which still remains, now upward of 6 centuries old. Worcester subsequently suffered much from the incursions of the Welsh; and during the civil war, having espoused the cause of Charles I., it suffered severely from the soldiers of the parliament. On Sept. 3, 1651, a battle was fought here between

Charles II. and Cromwell, in which the royalists were utterly routed. The young king escaped by flight and concealment to Normandy.

WORCESTER, JOHN TIPTOFT, earl of, an English statesman, born in Everton, Cambridgeshire, in the early part of the 15th century, beheaded in the tower of London in 1470. He was educated at Baliol college, Oxford, and in 1449 was appointed by Henry VI. lord deputy of Ireland, and at the same time created earl of Worcester. Under Edward IV. he was made constable of the tower and lord treasurer. During the temporary return to power of the Lancastrians in 1470 he was apprehended and beheaded. He was a man of considerable learning, a great collector of books, and a liberal donor to the library of Oxford university. His literary productions comprise English translations of Cicero *De Amicitia* (printed by William Caxton) and of that portion of Cæsar's "Commentaries" which relates to Britain, and a number of miscellaneous works. —EDWARD SOMERSET, second marquis of, an English inventor, born in 1597, died April 3, 1667. With his father, the first marquis, he zealously maintained the royal cause during the civil wars, and Raglan castle, the family seat, was one of the last places that held out against the parliamentary forces. He is entitled to the credit of having invented and constructed the first actual steam engine, a description of which is given in his work entitled "A Century of the Names and Scantlings of such Inventions as at present I can call to mind to have Tried and Perfected," first printed in 1663. He published also "An Exact and True Definition of the most Stupendous Water-Commanding Engine, invented by the Right Honorable (and deservedly to be praised and admired) Edward Somerset, Lord Marquis of Worcester." Neither work describes the manner of constructing his engine, but from what he says of its operation there seems no doubt that it resembled in principle the modern steam engine. He was looked upon by his contemporaries as a visionary speculator. (See STEAM ENGINE, vol. xv. pp. 47, 48.)

WORCESTER, JOSEPH EMERSON, LL.D., an American lexicographer, born in Bedford, N. H., Aug. 24, 1784. In 1794 his parents returned to Hollis, N. H., which had been the family residence since 1750, at which time his great-grandfather, the Rev. Francis Worcester, took up his abode there. His early education was chiefly obtained at Hollis, at Phillips academy, Andover, Mass., and at Salisbury, N. H. He was graduated at Yale college in 1811, and for several years afterward taught in Salem. While here, he prepared the greater part of his "Geographical Dictionary, or Universal Gazetteer," a work in 2 vols., printed at Andover in 1817. His "Gazetteer of the United States" was printed at the same place in 1818. He removed to Cambridge, Mass., in 1819, and in the same year published "Elements of Geography, Ancient and Modern," in 1820 the "Epitome of Geography," in 1823 "Sketches of the Earth and its Inhabitants," and in 1826–'8 "Elements of History, Ancient and Modern," "Epitome of History," and "Outlines of Scripture Geography," each of these works excepting the "Sketches" being accompanied with an atlas. Dr. Worcester's first effort in the field of English lexicography was "Johnson's English Dictionary, as improved by Todd and abridged by Chalmers, with Walker's Pronouncing Dictionary combined," which was edited by him on principles fixed upon by the publishers and their literary advisers, and brought out in 1827, from which time till the present he has chiefly devoted himself to this department of literature. In 1828, while engaged upon his "Comprehensive Pronouncing and Explanatory Dictionary," he was induced by the publisher of Webster's "American Dictionary" to prepare an abridgment of that work. His "Comprehensive Pronouncing and Explanatory Dictionary" appeared in 1830. The period from Nov. 1830, to Sept. 1831, was spent in Europe, during which time he visited the universities of England and Scotland, and collected many valuable philological and lexicographical works. In 1846 appeared his "Universal and Critical Dictionary of the English Language," which was afterward reprinted in London without his consent, with a title page altered so as to read "Webster's Critical and Pronouncing Dictionary, &c., enlarged and revised by Worcester," and with a garbled preface. In 1855 he published a "Pronouncing, Explanatory, and Synonymous Dictionary;" and in 1860, after more than 30 years for the most part spent in lexicographical studies and labors, he gave to the public his chief work, "A Dictionary of the English Language" (4to., Boston). Dr. Worcester has also published a "Spelling-book of the English Language," "Remarks on Longevity," &c., and was the literary editor of the "American Almanac" from 1831 to 1843 inclusive. He has received the degree of LL.D. from Brown university and from Dartmouth college, is a fellow of the American academy of science, a corresponding member of the royal geographical society in London, and a member of other learned bodies.

WORCESTER, NOAH, D.D., an American clergyman, born in Hollis, N. H., Nov. 25, 1758, died in Brighton, Mass., Oct. 31, 1837. He was a fifer in the army in 1775, and entered the service again for a short time as fife-major in 1777, being at the battles of Bunker hill and Bennington. In 1786, having previously studied hard, written a little, taught school, and worked at shoemaking, he was licensed to preach by a Congregational association, and the next year ordained pastor of the church in Thornton, where he had lived 5 years, and been schoolmaster, selectman, town clerk, justice of the peace, and representative to the general court. His salary being only $200, he made up the deficiency partly by laboring on a farm and partly by making shoes. In 1802 he was employed as the first missionary of the New Hampshire missionary society, and labored in that capacity again in 1804. In Feb. 1810, he removed to Salisbury, and took charge of the congregation of which his brother, then in feeble health, was pastor, and continued there as his brother's assistant or substitute for about 3 years. When he removed to Salisbury he was engaged in the publication of a work on the doctrine of the Trinity, entitled "Bible News of the Father, Son, and Holy Ghost," which soon became the subject of severe animadversion. The Hopkinton association, of which he was a member, passed a formal sentence of condemnation against the book, and in Nov. 1810 was published "An Address to the Churches in connection with the General Association of New Hampshire on the subject of the Trinity." Having taken up his residence in the vicinity of Boston, from 1813 to 1818 he edited "The Christian Disciple," a periodical published in that place. In 1814 he published his celebrated tract entitled "A Solemn Review of the Custom of War," which has been translated into several languages. Shortly after this the Massachusetts peace society was formed, and in 1819 he commenced "The Friend of Peace," which continued in quarterly numbers for 10 years, nearly the whole of it being written by himself. In 1829 he published "The Atoning Sacrifice a Display of Love, not of Wrath;" in 1831, "The Causes and Evils of Contention among Christians;" and in 1833, "Last Thoughts on Important Subjects."—**Samuel**, D.D., an American clergyman, brother of the preceding, born in Hollis, N. H., Nov. 1, 1770, died at Brainerd, Tenn., June 7, 1821. He was graduated at Dartmouth college in 1795, licensed to preach in 1796, and ordained pastor of the church in Fitchburg, Mass., in 1797. In 1802 he was dismissed on account of a difference of religious opinion between himself and a portion of his church. He was installed pastor of the Tabernacle church, Salem, in 1803, chosen professor of theology in Dartmouth college the same year, but declined the appointment, became corresponding secretary of the American board of commissioners for foreign missions in 1810, and in 1815 became engaged in the Unitarian controversy, having for his immediate opponent the Rev. Dr. Channing. At the time of his death he was travelling for the benefit of his health, intending on the journey to visit the missionary stations of Eliot and Brainerd. He published three orations; six sermons on the doctrine of future punishment (1800); three letters to Dr. Channing in connection with the Unitarian controversy (1815); Watts's entire and select hymns (1818); and various occasional sermons, reports, reviews, essays, &c. A posthumous volume of his sermons appeared in 1823.—His son, **Samuel Melancthon**, D.D., born in Fitchburg, Sept. 4, 1801, was graduated at Harvard college in 1822, was for several years professor of rhetoric and oratory in Amherst college, and then became pastor of the church in Salem which had been served by his father. He has published a memoir of his father entitled "Life and Labors of Rev. Samuel Worcester" (2 vols. 12mo., Boston, 1852).

WORCESTERSHIRE, a W. county of England, bounded N. W. and N. by Shropshire and Staffordshire, E. by Warwickshire, S. by Gloucestershire, and W. by Herefordshire; area, 723 sq. m.; pop. in 1861, 307,601. The chief towns are Worcester, the capital, Evesham, Droitwich, Dudley, Kidderminster, and Bewdley. The surface is generally level or undulating, and there are some beautiful vales on the banks of the rivers, the chief of which are the Severn, Avon, Stour, and Teme. The soil is very deep and fertile. Worcestershire is celebrated for its orchards and cider. Coal, salt, and iron are found. Dudley is the chief seat of the iron manufacture. Kidderminster is famous for its carpets, and Worcester for its porcelain. Worcestershire sends 12 members to parliament, 4 for the county, and 8 for the principal towns.

WORDE, Wynkin de, a printer, born in the dukedom of Lorraine about the middle of the 15th century, died in London about 1534. He accompanied Caxton to England in 1476 or 1477, and remained as his assistant till his death in 1491, when he succeeded to his business, and in 1497 removed to the "Sygn of the Sonne in flete strete, against the condyth." Soon after taking charge of the business on his own account, he made great improvements in the art, introducing Roman letters, and cutting many new fonts of all sizes and of greatly improved appearance. He also supplied type to other printers, who soon became numerous. He introduced into his "Instructions for Pilgrims to the Holy Land" (London, 1523) Greek type, of which he was the first in England to make use, and also some Arabic and Hebrew words, which were cut on wood blocks. Some of his punches are said to be still in existence. During the period between 1491 and 1534 he published 408 distinct works, most of them remarkable at that period for neatness and elegance, and many illustrated by wood engravings, said by Jackson ("History of Wood Engraving") to have been executed in England, and not procured on the continent, as had generally been supposed. The colophon or device of Wynkin de Worde, appended to his books, is usually that of Caxton with his own name in Gothic letters underneath; but in a few cases he used a much more complicated one, embracing the emblazonments of the later Plantagenets and the Tudors. His will is still extant in the prerogative office. His books are rare, though not as rare as those of Caxton; they are much sought after, and bring high prices. One of them, "The Moste Pyteful Hystorye of the Noble Appolyn, Kynge of Thyre," brought £110 at the duke of Roxburghe's sale.

WORDSWORTH, William, an English poet, born at Cockermouth, among the Cumberland hills, April 7, 1770, died at Rydal Mount, April 23, 1850. He was the second child of John Wordsworth, an attorney, who superintended a part of the Lowther estates, and of Anne Cookson, daughter of a mercer at Penrith. He supposed himself to be descended from the Wordsworths of Peniston, near Doncaster, who had been landholders from the time of the conquest, but the pedigree was conjectural. His mother died when he was 8 years old, and expressed anxiety about him alone of all her children, predicting from his indomitable self-will and violent temper that he would be steady in good or headstrong in evil. He attended school at Cockermouth, and from his 9th year at Hawkshead, in the most picturesque district of Lancashire, where he often roamed by day and night over the country, read the fictions of Fielding, Swift, Cervantes, and Le Sage, and composed poems for his own amusement and for school exercises, which he afterward condemned as "false from their over wrought splendor." His father died in 1783, and under the guardianship of his uncles he was sent in his 18th year to St. John's college, Cambridge, of which he continued a student till 1791, when he received the degree of B.A. Averse to collegiate studies and discipline, impatient of restraint and control, and preferring to pass his evenings either with gay companions or alone in the college gardens by the Cam, gazing at the trees, and peopling the walks with fairies, his memories of his *alma mater* were by no means affectionate; but he made himself master of Italian, and extended his acquaintance with the classics and the English poets. He ascribes to this period a growing belief in his own mission as a poet, and selected Chaucer, Spenser, Milton, and Shakespeare as the four models whom he must have constantly before his eyes. During his third vacation in 1790 he made with a fellow collegian a pedestrian tour through France, Switzerland, and the north of Italy, being in France when the revolutionary enthusiasm was at its height. After taking his degree he lodged for 4 months in London, often listening to the debates in the house of commons on the French revolution; went on a pedestrian excursion to North Wales; and in the autumn of 1791 started on a second pilgrimage to France, where he shared so fully in the hopes and ideas of the time that he entertained the project of becoming a naturalized Frenchman. He remained about a year at Orleans, Blois, and Paris, and was meditating how to rally about himself the struggling factions and to guide the revolution to a glorious issue, when circumstances obliged his return to England, just in time, as he afterward acknowledged, to save him from the guillotine. He fixed his abode in London, and to vindicate his talents, which his Cambridge career had brought into question, he published in 1792 two poems in the heroic couplet, "An Evening Walk, addressed to a Young Lady," and "Descriptive Sketches, taken during a Pedestrian Tour among the Alps." The slight notice which they attracted was not at all satisfactory, though Coleridge says that "seldom, if ever, was the emergence of an original poetic genius above the literary horizon more evidently announced." They were afterward so changed as to destroy their historical, without adding much to their poetical value. In his republican zeal, he proposed in an unpublished letter to the bishop of Llandaff to scatter plenty over the land by abolishing the monarchy and the peerage, was indignant that England made war against France, and after witnessing on the Isle of Wight the equipment of the fleets strayed toward Wales, and, connecting in his imagination the dreariness of Salisbury plain with the rovings of disbanded sailors and of the widows of the slain, commenced in the Spenserian stanza the poem of "Guilt and Sorrow," which did not appear entire till 1842. Meantime his friends urged him to enter either the law or the church, but he believed himself unfit for the former, and his present theological and political opinions were incompatible with the latter. He projected a monthly miscellany to be called "The Philanthropist," and sought an engagement as contributor to some opposition newspaper; but each scheme seemed impracticable, when in 1795 he received a legacy of £900 from Raisley Calvert, a young friend whom he had attended and cheered during several months of his last illness. "Upon the interest of the £900," he says, "£400 being laid out in an annuity, with £200 deducted from the principal, and £100 a legacy to my sister, and £100 more which the 'Lyrical Ballads' brought me, my sister and I contrived to live seven years, nearly eight." A further sum of £8,500 was paid over to the family in 1802, to be divided among 5 children, as arrears due from the earl of Lonsdale (Sir James Lowther); and with this provision Wordsworth resolved to make poetry the sole business of his life, having already conceived of painting an "infinite variety of natural appearances that had been unnoticed by the poets of any age or country." During his unsettled and roving career, he had become accustomed to temperance and economy, and in the autumn of 1795 he established himself at Racedown, in Somersetshire, with his sister Dorothy, his cherished associate during the remainder of his life, to whom he ascribed the happiest influence upon his character and tastes. There he began the tragedy of "The Borderers," upon which he bestowed much time and thought, but which was never acted, and was published in 1842 only to be pronounced an unqualified failure. In June, 1797, Coleridge visited him at Racedown, and the two poets, charmed with each other, became friends for life. Coleridge, astonished by the new and unexpected contemplations and feelings which Wordsworth evolved from the common appearances of the world, declared himself "a little man by his side;" and Wordsworth, seeing Coleridge in his fullest and freshest bloom, and dazzled by his exhaustless intellectual hoards and colloquial displays, while his mind was yet undimmed by opium, said that other men of the age had done wonderful things, but that Coleridge was the only wonderful man he had ever known. The Wordsworths soon repaid his visit at his residence in Nether-Stowey, Somersetshire, and for the sake of being near to him and enjoying his daily converse removed to a house in the neighboring village of Alfoxden. In Nov. 1797, the poets started on a pedestrian tour through the surrounding country, and, in order to make their wits pay for their pleasure, began a joint composition. Coleridge suggested the theme of "The Ancient Mariner," to which his partner contributed one or two ideas; but they soon discovered that the supernatural was the stronghold of the one, and the natural of the other; that it was the aim of Coleridge to bring unearthly subjects within the range of earthly feelings, and of Wordsworth to reveal in lowly things a high and spiritual significance; and they began to concentrate their powers upon separate poems. They were visited by Thelwall, famous from his trial for high treason, and the government was led to suspect treasonable counsels in their constant conferences. A spy was sent to watch them; the villagers mistrusted them; the habits of Wordsworth, haunting lonely places and the sea shore by moonlight, and muttering to himself, contributed to the delusion, and led some to believe that he was crazed, and others that he was a smuggler; and at length the agent of the landlord at Alfoxden refused to let the house any longer to so dangerous a character. This determined the two poets and Miss Wordsworth to make a trip to Germany, and to raise the requisite funds the volume entitled "Lyrical Ballads" was offered to the poet and publisher, Joseph Cottle of Bristol. He proffered 30 guineas for Wordsworth's portion; made a separate bargain with Coleridge for "The Ancient Mariner," the first piece in the collection; printed an edition of 500 copies (1798); and soon after sold the larger part of the impression at a loss to a London publisher, and presented the copyright, as of no value, to Wordsworth. The volume was an experiment upon the public taste as to how far the humblest subjects and language "really used by men" should be deemed fit for poetry; many of the pieces were of a ludicrous simplicity, which seemed the more grotesque in contrast with the formal and often finical art which marked English verse in the 18th century; and the attempt was universally neglected, ridiculed, or condemned. Meantime Wordsworth sailed from Yarmouth, had interviews with Klopstock at Hamburg, remained several months at Goslar, continued the composition of minor pieces, returned to England in the spring of 1799, and soon after took up his residence with his sister at Grasmere, in Westmoreland. In 1800 appeared a second edition of the "Lyrical Ballads," in 2 volumes, with the addition of many new pieces, and with an exposition in prose of the principles on which as a poet he professed to write. His theory was that the English nation, having lost much of the genuine poetical power which it once possessed, had come to regard the essence of poetry as lying in metre and diction, in the art of expression; that an exaggerated antithesis between prose and poetry in respect of form, and an oversight of the vital quality of poetry, had been the result; that genuine poetry takes its origin in an attitude of the mind, in the recollection of emotion; that the business of a poet is to represent scenes and passions of an affecting or exciting character in the spontaneous language of real life; that metre and rhyme are to be tolerated only as auxiliaries to give pleasure; that the European mind was roused to a higher mood and energy near the close of the 18th century, and poetic inspiration returned with Cowper and Burns; and that, with the revival of real passion and poetic vision, poetical composition should resume its essential characteristic of unrhetorical truth and simplicity in the delineation of feeling. He was encouraged in this view by his own faculty of discovering latent capabilities of poetical suggestion in the most insignificant objects, and by his sympathy with the blunt manners, lively affections, and picturesque aspects of the villagers and rustics by whom he was surrounded. He illustrated in his poems both the best and worst tendencies of his system, and, while discovering beauty in neglected and homely materials, also often demanded sympathy for the pettiest traits of common life and adopted the feeblest forms of common talk. His "Lyrical Ballads" were reprinted in 1802, and again in 1805; commanded the admiration of many young enthusiasts, as John Wilson and Thomas De Quincey; and were mentioned by Jeffrey in 1807 as "unquestionably popular." In 1802 he married Miss Mary Hutchinson of Penrith, whom he had known from childhood, and on whom he wrote the exquisite lines, "She was a phantom of delight," &c.; and his residence in the lake district of northern England, to which Southey had also retired, and where Coleridge was a frequent visitor, gave rise to the appellation of the lake school, applied to the three poets and their associates. In 1803, on a tour through Scotland, he made the acquaintance of Sir Walter Scott and Sir George Beaumont; in 1805 he suffered his first serious sorrow from the death of his brother Capt. John Wordsworth, who perished by shipwreck; and in 1807 he published 2 new volumes of "Poems," which were assailed with all the severity of criticism. Jeffrey, who, as the editor and most brilliant contributor of the "Edinburgh Review," held an almost despotic sway over current literature, had always ridiculed the lake poets, and condemned these volumes as miserably inferior to their predecessors. His contemptuous article nearly put a stop to the sale. "The controversy between the 'Edinburgh Review' and Wordsworth," says Masson, "was literally a contest between the old and the new; in which, however, the old derived certain advantages from the obstinacy and want of tact with which the new exposed and made a boast of its most galling peculiarities." The special criticisms of Jeffrey differ but little, except in style and temper, from those advanced by Coleridge in his "Biographia Literaria" on the puerile language and trivial details which Wordsworth often affected in the championship of his theory. In 1809 he appeared as a political prose writer with an eloquent essay on the convention of Cintra, which he strongly opposed; and from that time he abandoned his republican dreams and became a conservative both in matters of church and state. The birth of 3 children obliged him to seek larger accommodations than those at Grasmere, and he removed in 1808 to Allan Bank, and in 1813 to Rydal Mount, his residence for the remainder of his life, commanding a beautiful view of the lake of Rydal and of part of Windermere, and having grounds and gardens which were by degrees most skilfully embellished under his direction. In 1813 also he was appointed, through the influence of Lord Lonsdale, to the distributorship of stamps in the county of Westmoreland, an office which he could discharge by deputy, and which afforded him over £500 a year. It had long been his aim to compose a vast philosophical poem, embodying views of men, nature, and society, as an introduction to which he completed in 1805 "The Prelude," first published posthumously, containing a record of the cultivation and progress of his own powers. The main poem, entitled "The Recluse," was to consist of 3 parts, to which "The Prelude" was to have the relation of an antechapel to the body of a Gothic church, while all his minor poems were to represent the cells, oratories, and sepulchral recesses belonging to such an edifice. Only the second part, entitled "The Excursion" (1814), the noblest and most elaborate of his productions, was ever published. It is in blank verse, and contains passages of sentiment, description, eloquence, and profound philosophical meaning rarely surpassed; yet the dissertation is often tedious, and the plot incongruous, the whole plan embracing but a 3 days' walk among the mountains, and the principal discourses "of truth, of grandeur, beauty, love, and hope," being put into the mouth of a poor Scotch peddler. Jeffrey began his criticism with the proclamation: "This will never do!" and when the article was called a "crushing review," Southey retorted that the critic might as easily crush Skiddaw. From this time the war between the poet and the reviewer waned; concessions were made on both sides; the former less frequently illustrated his extreme views in verses of ludicrous simplicity and pathos, and the latter began to do justice to the merits as well as the defects of the new school. In 1815 appeared "The White Doe of Rystone," a romantic narrative poem, to which in point of conception he assigned the highest place among his productions; in 1819 the serio-comic tales of "Peter Bell" and "The Wagoner," both of which had been written many years before, and were severely attacked; and in 1822 a collection of sonnets and poems under the title of "Memorials of a Tour on the Continent," soon followed by his series of ecclesiastical sonnets. His whole income from his literary labors had not in 1819 amounted to £140, and even in 1829 he remarks that he had worked harder through a long life for less pecuniary emolument than a public performer gets for 2 or 3 songs. But his reputation rose rapidly from 1830 to 1840; new editions of his previous volumes were demanded; in 1839 the degree of D.C.L. was conferred on him by the university of Oxford amid enthusiastic plaudits; in 1842 he was permitted to resign his office to his second son, and received a pension of £300; and in 1843 he succeeded Southey as poet laureate. He published a collected edition of his poems in 1842, arranging them in a new order according to subjects. His health was shaken in 1847 by the death of his only daughter Dora (Mrs. Quillinan), but he continued generally well till within a few weeks of his own death, on the anniversary of St. George and of the birth and death of Shakespeare.—With the exception of tours in Scotland and on the continent, and occasional visits to London, his whole life was passed among the lakes. In enjoyment of worldly competence, he walked, boated, wrote, attended church, and received visitors. In his later years the day began and closed with prayers; and after breakfast the family read the lessons and psalms. His study was the open air, in which, he says, nine tenths of his poems were shaped. The neighbors who heard him in the act of verse making, after some prolonged absence, were wont to exclaim: "There he is; we are glad to hear him booing about again." The first characteristic of his poetry is his extreme sensibility to and accurate acquaintance with the changing phenomena of external nature. By no one else has the world of sight and sound, from the planetary motions in the heavens down to the restless shadow of the smallest flower, been so sedulously studied during a long life. II. CHRISTOPHER, D.D., an English clergyman and author, youngest brother of the preceding, born at Cockermouth, Cumberland, June 9, 1774, died at Buxted, Sussex, Dec. 31, 1839. He was graduated B.A. at Trinity college, Cambridge, in 1796, and elected to a fellowship. His "Six Letters to Granville Sharp, Esq., respecting his Remarks on the Use of the Definite Article in the Greek Text of the New Testament" (1802), procured him the situation of chaplain to the archbishop of Canterbury. He afterward obtained a rectory in Norfolk, and in 1808 the deanery of Bocking, Essex, whence he was transferred in 1816 to the rectory of St. Mary's, Lambeth, and Sundridge, Kent. He exchanged these afterward for the rectory of Buxted. In 1820 he was installed in the mastership of Trinity college, Cambridge, which he resigned after holding it for 21 years. He published an "Ecclesiastical Biography" (6 vols. 8vo., 1809); "Sermons on Various Occasions" (1814); "Who wrote Εικων Βασιλικη?" (1824); "King Charles I. the Author of Icōn Basilikè, further proved" (1828); and "Christian Institutes" (4 vols. 8vo., 1837), designed for students in the university and candidates for holy orders. III. Christopher, D.D., son of the preceding, born about 1808, was educated at Trinity college, Cambridge, of which he was afterward chosen a fellow, travelled in Greece in 1832–'3, recording his impressions of the journey in his "Athens and Attica" (1836), took orders, became head master of Harrow school in 1835, was chosen public orator of the university of Cambridge in 1836, and in 1844 was appointed a canon of Westminster. He became vicar of Stanford-in-the-Vale, Berkshire, in 1850. Dr. Wordsworth is a voluminous author, having published, beside the work above mentioned, "Ancient Writings copied from the Walls of the City of Pompeii" (1838); "Greece, Pictorial, Descriptive, and Historical;" "The Correspondence of Richard Bentley" (2 vols. 8vo., 1842); "Theophilus Anglicanus, or Instruction for the young Student concerning the Church, and our own Branch of it" (1843; abridged and published under the title of "Elements of Instruction concerning the Church," &c., 1849); "Diary in France, mainly on Topics concerning Education and the Church" (1845); "Letters to M. Gondon on the Destructive Character of the Church of Rome" (1847; with a "Sequel," 1848); "On the Canon of the Scriptures" (1848); "Lectures on the Apocalypse" (1849); "Memoirs of William Wordsworth, Poet Laureate" (2 vols. 8vo., 1851); "St. Hippolytus and the Church of Rome in the earlier part of the Third Century" (1853); "Remarks on M. Bunsen's Work on St. Hippolytus" (1855); "Babylon, or the Question examined, Is the Church of Rome the Babylon of the Apocalypse?" beside an edition of Theocritus, sermons, a volume of prayers for Harrow school, &c. IV. Charles, D.C.L., an English divine, brother of the preceding, born in 1806, was educated at Christchurch, Oxford, where he became a tutor, and was second master of Winchester college from 1835 to 1846, and first warden of Trinity college, Perthshire, from 1846 to 1854. In 1853 he was consecrated bishop of the united sees of St. Andrew's, Dunkeld, and Dunblane, Scotland. He has published a Greek grammar (1839); a series of discourses under the title of "Christian Boyhood at a Public School;" "The College of St. Mary, Winton;" a manual of instruction on confirmation entitled "Catechesis;" a letter to Mr. Gladstone on "Religious Liberty;" "Notes on the Eucharistic Controversy;" "A United Church of England, Scotland, and Ireland vindicated" (1862); together with various sermons, pamphlets, &c.

WORKHOUSE. See Pauperism.

WORMIUS, or Worm, Olaf, a Danish physician and scholar, born in Aarhuus in 1588, died in 1654. He was educated at Marburg and at Strasbourg, where he studied medicine, and after travelling in France, Italy, Holland, and England, returned in 1613 to his native country, where he was made professor of belles-lettres in the university of Copenhagen. In 1615 he was transferred to the chair of the Greek language, and in 1624 to that of medicine. As a physician he was employed by his sovereign Christian V., who rewarded him for his services with the post of canon of the cathedral at Lund. In the history of anatomy he is known by the bones of the skull called after him *ossa Wormiana*, of which he made a particular description. He wrote works on medicine and natural history, and also on the history and antiquities of Norway and Denmark.

WORMS (*vermes*), the lowest class of articulated animals, containing, according to Agassiz, the 3 orders trematoids (including cestods, *planariæ*, and leeches), nematoids (including *acanthocephala* and *gordiacei*), and annelids. Most of these orders have been described under Annelida, Earthworm, Entozoa, Leech, and Nereids, leaving only two of sufficient interest to be noticed here.—The planarians have an oval or elliptical form, generally with an extensible proboscis springing from the ventral surface, leading into a large digestive cavity with numerous branches, but without anal opening; though gelatinous, they have great contractile powers, and can reduce themselves to a lump of jelly, in which shape incautious eaters of water cresses are liable to swallow them; they live in both salt and fresh water, swimming with an undulating motion like leeches, and creeping easily on stones and aquatic plants; though of small size, they are voracious and carnivorous. They are capable of remarkable increase by subdivision; of the black planaria of the English coasts (*P. nigra*) Dalyell says it is "privileged to multiply its species in proportion to the violence offered to its otherwise delicate frame; it may almost be said to be immortal under the edge of the knife;" every section of the body becomes a perfect animal, and if the head or tail be cut off it is replaced. There are many marine species, an inch or two long, on the North American coast, for descriptions of some of which by C. Girard see "Proceedings of the Boston Society of Natural History," vols. iii. and iv. (1848–'52); their form is generally flattened, like the foot of a gasteropod mollusk; Mr. Girard is inclined to place them among mollusks. In the allied genus *nemertes* (Cuv.), commonly called ribbon worms, the body is more elongated and has a distinct anus; *borlasia* (Oken), found on the coasts of England and France, attains a length of more than 15 feet, remaining coiled up by day under stones and seeking for prey at night. The genus *gordius* (O. Müller), containing the curious hair worms, has a very long and slender body, presenting an extraordinary resemblance to a horse hair, whence the popular belief of their origin from hairs dropped accidentally into the water; they have the intestinal canal without anus, and live as parasites in the bodies of various insects, occupying often more space than the internal organs of their hosts; a specimen 11 inches long has been found in a ground beetle of only one inch, and others have been seen 3 feet long; when mature they quit the bodies of insects, and go into water or moist earth, where they lay their eggs in long chains, at times suddenly appearing in such vast numbers as to give rise to the reports of "worm rains;" they are able to remain hard and brittle in dry weather, recovering after a rain. The common *G. aquaticus* (Müll.) is 7 to 10 inches long, and $\frac{1}{25}$ to $\frac{1}{20}$ of an inch wide, the tail in the male being bifid; the young escape from the eggs in about 3 weeks, of a very different shape from their parents, being $\frac{1}{450}$ of an inch long, with the posterior portion of the body cylindrical, rounded and furnished with short spines at the end; the anterior is wider, the mouth having 2 circles of retractile tentacles and a club-shaped proboscis; they are swallowed alive by beetles and other insects, in the bodies of which they undergo development into the long hair worms.

WORMS, a city of the grand duchy of Hesse-Darmstadt, 26 m. from Mentz, on the left bank of the Rhine; pop. in 1855, 10,728. It has a cathedral of Romanesque architecture, built in the 11th century, and 7 other churches, with a synagogue of the 11th century. Patent leather is extensively manufactured, and the famous wine called *Liebfrauenmilch* is produced on an adjoining hill.—The city is one of the oldest of Germany; it is the scene of the *Nibelungen-Lied*, and there are traces of Roman occupation. Attila destroyed, and Clovis rebuilt it. Charlemagne and the Carlovingians often resided here. Important councils of the church and imperial diets were held here, including that before which Luther appeared on April 17 and 18, 1521. In the 13th century Worms had 60,000 inhabitants, and at the end of the 30 years' war 30,000. In 1622 it was sacked by the imperialists, and in 1689 by the French.

WORMWOOD, a homely herb with a proverbially bitter taste, usually seen in gardens, though occasionally found in waste places by the roadsides, and of value for its aromatic and medicinal qualities, being tonic, a vermifuge, &c. The common wormwood (*artemisia absinthium*, Linn.) has a perennial root; clustered and numerous stems springing from the base of the plant, which grow 2 or 3 feet high; abundance of long, petiolate, irregularly bipinnatifid leaves, hoary with short silky pubescence, which likewise clothes the entire plant; composite flowers in numerous heads on leafy racemes, the florets yellowish, the seeds (achenia) oblong and smooth. There are several other species, such as the tarragon, used to impart a flavor to vinegar, the southernwood, the mugwort, &c., seen in gardens, and the moxa (*A. moxa*, De Candolle), a native of China, the loose wool of the stems and foliage of which is employed as an inflammatory substance in surgery. The wormwoods are all readily propagated from their seeds or by division of their roots. They are generally indigenous to Europe.

WORNUM, Ralph Nicholson, an English author, born in Thornton, North Durham, Dec. 29, 1812. He was educated at University college, London, and between 1834 and 1839 studied painting and the fine arts in the principal continental cities. Having practised portrait painting for some years in London, he devoted himself principally to the literature of his profession, in which he has since been occupied. In 1848 he was appointed lecturer on ornamental art in the government schools of design, and in 1852 librarian and keeper of casts in the department of art into which they were constituted. He resigned these offices upon being appointed in 1855 keeper and secretary of the national gallery, which post he still retains (1862). He is the author of a "History of Painting, Ancient and Modern" (2 vols. 12mo., 1847), and "Epochs of Painting" (1860); of several biographical and descriptive catalogues illustrative of the national gallery; and of 4 reports prepared while he was connected with the department of art. He wrote the article "Painting" and most of the biographies of artists in the "Penny Cyclopædia" and "English Cyclopædia," and has been a frequent contributor to the "London Art Journal" and other periodicals of the class. As keeper of the national gallery he prepared for exhibition the valuable bequest of Turner.

WORONICZ, Jan Pawel, a Polish prelate and poet, born in Volhynia in 1757, died in Vienna, Dec. 4, 1829. He was educated by the Jesuits at Ostrog, became a member of that society, and was employed as secretary by the bishop of Warsaw. Under Alexander I. he was made bishop of Cracow, and under Nicholas in 1828 primate of Poland. He was distinguished as a preacher in country churches before his elevation, and afterward crowds flocked to hear him in the cathedral of Warsaw. His poems (*Poezye*, 2 vols., Cracow, 1832) are remarkable for vivid and glowing diction and lyrical sublimity; his prose writings (*Pisma*, 6 vols., Cracow, 1832), including his sermons, have in beauty of style hardly been surpassed by those of any other Polish writer.

WORONZOFF, or Vorontzoff, a noble family of Russia, descended from Gabriel Woronzoff, who died at the siege of Tchighirin in Little Russia in 1678, and one of whose grandsons, Mihail, became the lover of the empress Elizabeth. By her he was made chancellor of the empire and minister of foreign affairs, and received through her influence in 1744, from the emperor Charles VII., the title of count of the holy Roman empire. In 1760 his two brothers, Roman and John, obtained the same position. Count Mihail was chiefly known as a diplomatist, and in 1745 negotiated the alliance between Sweden and Russia, and subsequently another treaty with Austria in regard to the succession of Maria Theresa. In the last years of the reign of Elizabeth he stood at the head of the Swedish party, but lost his influence after the accession of Catharine II. He died in 1767. Of his three nieces, one, Elizabeth Romanovna, was the mistress of Peter III. before he ascended the throne, and another, Catharine Romanovna, was the princess Dashkoff. In 1797 the family of Woronzoff received the dignity of counts.—The most celebrated later member of the family is MIHAIL SEMENOVITCH, Prince Woronzoff, a Russian general and statesman, born in Moscow in 1782, died in Odessa, Nov. 18, 1856. He was brought up in England, where his father was Russian ambassador, and where his sister was married to the earl of Pembroke, father of the Rt. Hon. Sidney Herbert. Upon returning to his native land, he entered at the age of 19 the Russian army, fought in the Caucasus under Tzitzianoff, and in Turkey under Kutusoff, and highly distinguished himself in the campaigns of 1812–'14 against France, commanding a division at the battle of Borodino, where he received a severe wound. From 1815 to 1818 he commanded the Russian contingent of the army of occupation in France, and in the latter year attended the congress of the allies at Aix la Chapelle. In 1823 he was made governor of New (South) Russia and Bessarabia, and in 1826 with Ribeaupierre negotiated the treaty of Akerman with the Ottoman Porte. In 1828, after Prince Mentchikoff was wounded, he conducted the operations of the siege of Varna. In Dec. 1844, he received in addition to his other government that of the Caucasus. He directed a severe campaign in that country, and on July 18, 1845, took and destroyed Dargo, Shamyl's chief town, for which he was raised to the dignity of prince. In 1847 Salti was conquered, and in 1848 Gorgebil, while at the same time he endeavored by a conciliatory policy to gain over the native tribes; but the outbreak of the war with Turkey in 1853 rendered the difficulties of his position more arduous. Confined at Tiflis by sickness, his generals were successful in defeating the Turkish forces with which they were engaged; but in March, 1854, Woronzoff was under the necessity of repairing for the sake of his health to Carlsbad and Schlangenbad. He returned in October, and was released in the same month from his command. On the coronation of Alexander II. in 1856, he received the staff of field marshal, and for his services in the Caucasus and elsewhere monuments have been erected to his memory in Tiflis and Odessa.

WORSAAE, JENS JACOB ASMUSSEN, a Danish antiquary, born in Veile, Jutland, March 14, 1821. He was educated at Copenhagen, and devoted himself to the study of the early Scandinavian history. From 1838 to 1843 he was an assistant in the royal museum of northern antiquities. For the purpose of antiquarian investigations he made journeys in Denmark, Sweden, Norway, and Germany, and in 1846 published "The Primeval Antiquities of Denmark" (Copenhagen, 1846). He travelled in 1846 and 1847 in England, Ireland, and Scotland, to trace the vestiges of Scandinavian settlements, and for the same purpose visited in 1851–'2 Normandy and Brittany, central France, and England. In 1854 he made a journey to Italy. His writings are numerous and important.

WORSTED. See WOOL.

WORT, the unfermented product of brewing, or sweet infusion of malt. See BREWING.

WORTH. I. A new N. co. of Iowa, bordering on Minnesota, and drained by affluents of the Shell Rock and Iowa rivers; area, about 420 sq. m.; pop. in 1860, 756. The surface is undulating or level, and diversified by prairie and woodland. II. A new S. W. co. of Georgia, bounded N. E. by Flint river and S. E. by the Withlacoochee; area, about 900 sq. m.; pop. in 1860, 2,763, of whom 632 were slaves. It is intersected by the Albany branch railroad, unfinished. Capital, Isabella.

WORTH, WILLIAM JENKINS, an American general, born in Hudson, Columbia co., N. Y., March 1, 1794, died in San Antonio, Texas, May 7, 1849. He received an ordinary education, and became a trader's clerk at Hudson, but when the war of 1812 broke out enlisted as a private soldier. He was appointed a 2d lieutenant in the 23d infantry, March 19, 1813, was aide-de-camp to Gen. Lewis in 1813, and became aide-de-camp to Gen. Scott in March, 1814. He was brevetted as a captain for gallant conduct at the battle of Chippewa, July 5, 1814, and on July 25 won the brevet rank of major in the same manner at Lundy's Lane, where he was severely wounded. On the reorganization of the army in 1815, he was made a captain in the 2d infantry, and from March, 1820, to Dec. 1828, he was instructor in infantry tactics and commander of cadets at West Point. On May 30, 1832, he was appointed a major of ordnance, and on July 7, 1838, he became colonel of the 8th infantry. In 1840 he was sent to serve in the war against the Florida Indians, and in 1841, on the retirement of Gen. Armistead, took the chief command. He was successful in repeated and severe conflicts with the savages, whereby the war was brought to a close, and in August, 1842, was brevetted a brigadier-general for gallantry and distinguished services. On the approach of the war with Mexico he joined Gen. Taylor at Corpus Christi, and remained with him for some time, when he went to Washington intending to resign on account of a misunderstanding with Taylor. The outbreak of actual war induced him to change this determination. He returned to the army, and in the battle of Monterey, Sept. 23, 1846, bore a very important part. He commanded that division of the army which had been ordered to carry the heights on the Saltillo road, while Gen. Taylor with the other division advanced along the Seralvo road. As it was impossible to communicate with the commander-in-chief, Worth was obliged to act independently throughout the battle. He carried the forts commanding his line of approach, stormed the bishop's palace, and had fought his way through the streets nearly to the great plaza, when the town capitulated to Taylor, approaching from the other side. For these achievements Worth was brevetted a major-general, and received from congress a sword "in testimony of the high sense entertained by congress of his gallantry and good conduct in storming Monterey." Having been withdrawn from the army of Gen. Taylor prior to the battle of Buena Vista, he commanded a division in that of Gen. Scott at the capture of Vera Cruz. He was also distinguished at Cerro Gordo, and at the capture of Puebla and of the bridgehead at Churubusco; and at Molino del Rey, Sept. 8, 1846, he led the assault upon the almost impregnable defences of the Mexicans, which he carried with the loss of nearly one fourth of his command. He also distinguished himself in storming the San Cosme gate of Mexico on Sept. 13, and received there the message of the municipal authorities proposing to surrender the city. After the conclusion of the war Gen. Worth was placed in command of the department of the South-West, which he held till his death. Beside the sword presented to him by congress, he received others from the states of New York (1838) and Louisiana (1848), and from his native county, and in 1842 a vote of thanks from the legislature of Florida for having closed the Seminole war. A monument has been erected to his memory by the city of New York, at the junction of Broadway and Fifth avenue, fronting Madison square, beneath which his remains are interred.

WORTHINGTON, Thomas, a governor of Ohio, born near Charlestown, Jefferson co., Va., July 16, 1773, died in New York city, June 20, 1827. He removed to Ohio in 1797, and in 1799, 1800, and 1801 was a member of the territorial legislature, and in 1802 of the convention for forming a state constitution. He was a senator in congress from 1803 to 1807, and from 1810 to 1814, and governor of Ohio from 1815 to 1819. In 1826 he was chosen a member of the first board of canal commissioners. Few men have impressed their character more indelibly on the history of a state than Governor Worthington did upon that of Ohio.

WOTTON, Sir Henry, an English author, born at Bocton hall, parish of Boughton Malherbe, Kent, April 9, 1568, died in Dec. 1639. He was educated at Winchester school, and at New and Queen's colleges, Oxford, and in his 22d year left the university to travel. He spent a year in France, 3 years in Germany, and about 4 in Italy, and upon his return to England became secretary to the earl of Essex, whom he accompanied to Spain and Ireland. When Essex was charged with treason in 1601, Wotton fled to France. About March, 1602, he was in Florence, and was employed by the grand duke Ferdinand I. to carry information to King James of Scotland that a plot had been laid to assassinate him. He performed this mission very discreetly, and after a stay of 3 months in Scotland returned to Florence. On the death of Queen Elizabeth he proceeded to England, received at once the honor of knighthood, and in the next year (1604) was sent ambassador to Venice. He was recalled in 1610, toward the close of 1615 was sent on a mission to the United Provinces, and in 1616 was reappointed to the Venetian embassy. He afterward discharged several other diplomatic trusts, and in 1623 was appointed provost of Eton college, an office which he retained until his death. As it could not be regularly held by a layman, he was ordained deacon. He wrote "Elements of Architecture" (1624), then the best work on that subject; "The State of Christendom, giving a perfect and exact Discovery of many political Intrigues and secret Mysteries of State practised in most of the Courts of Europe" (fol., 1657); and several less important works. He is best known now by his poems, which, though few and brief, and generally of a fugitive character, display great delicacy of feeling and happiness of expression. His friend Izaak Walton published his life in 1651, with a collection of his poems, letters, and miscellaneous writings, under the title of *Reliquiæ Wottonianæ*.

WOTTON, William, an English divine and author, born at Wrentham, Suffolk, Aug. 13, 1666, died Feb. 13, 1726. He is said to have been able to read Latin, Greek, and Hebrew at 5 years of age, and entered Catharine hall, Cambridge, at 10. He there added to his studies the Chaldee, Syriac, and Arabic languages. He took his degree of B.A. in 1679, obtained various preferments, and wrote "Reflections upon Ancient and Modern Learning" (8vo. London, 1694), "A History of Rome," &c.

WOUVERMAN, Philip, a Dutch painter, born in Haarlem in 1620, died in 1668. He was instructed by his father, an indifferent artist, and by Wynants of Haarlem, in which city his life was passed. According to the commonly received account, his reputation during his life as a painter was small. After his death his pictures rose immensely in value, and he is now one of the most esteemed painters of the Dutch school. In consequence, it is said, of the disgust with which this neglect inspired him, he destroyed before his death all the studies he had made during his life, from fear that his son might be induced by the possession of them to become a painter. His subjects consist for the most part of roadside scenes and hunting or battle pieces, and it is commonly believed that he never painted a picture without a white or gray horse as a conspicuous object. His technical qualities are of a high order, and his skies, foregrounds, and foliage are executed in the best style of his school. He left upward of 800 carefully finished pictures.

WOW-WOW, a name given to the active and silvery gibbons. See Ape.

WRACKGRASS (*zostera marina*, Linn.), an aquatic plant of the natural order *naiadaceæ*, having a creeping rootstock sheathed by the bases of very long, linear, obtuse, ribbon-shaped, obscurely nerved, green leaves, whence the generic name (Gr. ζωστηρ, a band). The flowers are numerous, of two kinds, sessile and naked, arranged in two rows in a concealed spike, and appear in May and June. The plant is very common in bays and inlets of the sea along the coast of the United States, and is identical with the European form. When thrown ashore in the autumn, it is gathered in large quantities and used for protecting cellars from the frost, for covering tender plants through the winter, and for composting with manures, under the name of eel grass or sea weed. The dried stems and leaves are also sometimes used for packing brittle wares and for stuffing mattresses.

WRANGEL, Karl Gustaf von, count, a Swedish general, born in Skokloster, on Lake Mælar, Dec. 13, 1613, died in the isle of Rügen in 1675. He was the son of Hermann Wrangel, a Swedish state councillor, field marshal, and governor-general of Livonia. After spending some time abroad in study, he accompanied Gustavus Adolphus in his expedition to Germany, and at the battle of Lützen in 1632 rendered great services after the fall of the king. Under Bernhard of Weimar and Baner, who succeeded Gustavus in the command of the Swedish army, he rose rapidly, and upon the death of the latter in 1641 was one of the major-generals who commanded the Swedish forces until the arrival of Torstenson. Under him he participated in the campaign in Germany, and in the famous march to Holstein. He was then sent to reënforce Claas Flemming, the Swedish high admiral, who had been defeated by the Danes near the island of Femern, and after the death of Flemming received the supreme command, and obtained over the Danish fleet a great naval victory on Oct. 13, between the islands of Femern and Laaland, having previously been reënforced by the Dutch squadron. In 1645 he took possession of the island of Bornholm, and disputed successfully the sovereignty of the seas until the peace of Brömsebro, Aug. 23, when he returned to Germany; and in 1646 he succeeded Torstenson as commander-in-chief of the Swedish army. Retreating before the archduke Leopold from Bohemia, he effected a junction at Giessen with the French forces under Turenne, with whom he crossed the Main, captured several cities, and besieged Augsburg, which however was relieved by the Austrian army. In 1647 a separate armistice was concluded with the elector of Bavaria, and the Swedish general turned in July toward the Main, took Schweinfurt, and marching to Bohemia, captured Eger. In September the Bavarian elector suddenly broke the armistice, published a manifesto against the Swedes, and sent part of his army to assist the emperor. Wrangel was obliged to retreat precipitately from Bohemia in order to effect a junction with his allies. In the spring of 1648 the Swedes and French marched toward the Danube, and on May 17 defeated with terrible slaughter the united Austrian and Bavarian army near Zusmarshausen, not far from Augsburg. Forcing the passage of the Lech, they now drove the imperialists beyond the Isar and the Inn, and laid waste Bavaria, but were forced to retire beyond the Danube by the approach of an Austrian army under Piccolomini. After the treaty of Westphalia Wrangel passed several years in retirement. Upon the accession of Charles (X.) Gustavus he accompanied that monarch in his expedition to Poland, and was present at the three days' battle of Warsaw, July 18–20, 1656. Denmark having joined the alliance against Sweden, Wrangel in 1657 stormed the fortress of Fredericsodde (now Fredericia), for which he was created lord high admiral. He reduced Cronenberg in Sept. 1658, after a siege of three weeks, and took command of the fleet destined for the attack on Copenhagen; but the Danes being reënforced by a Dutch squadron, the contest which ensued in November was a virtual defeat for the Swedes. In the following years he kept the control of the Danish waters, and on the conclusion of the war in 1660 was made grand marshal of Sweden and generalissimo. In 1674, Sweden having made an alliance with France, which was carrying on a war with Germany, Wrangel unexpectedly broke in upon the states of the elector of Brandenburg at the head of 16,000 men. The elector recalled his forces from the Rhine, and the Swedes were defeated and obliged to evacuate Brandenburg and part of Pomerania. The failure of this campaign is attributed to the infirmities of Wrangel, who was most of the time confined to his bed by sickness. Hereupon he gave up his post, returning to his estate on the island of Rügen. He was raised to the dignity of count in 1645.

WRANGELL, Ferdinand Petrovitch, baron, a Russian navigator, born in Esthonia about 1795. He belongs to a noble family of his native province, and received his education at the school of cadets in St. Petersburg. Entering the naval service, he made several voyages as midshipman in the Baltic, and in 1817 served under Golownin, in the sloop of war Kamtchatka, in making an examination of the Russian American colonies and taking hydrographical observations in the surrounding waters. After his return from this voyage he was appointed in 1820 to the chief command of an expedition designed to explore the Russian polar seas. He was charged with the determination of the exact position of Cape Shelagin, to examine the coast east of this cape to Behring's straits, to visit the Bear islands and the mouths of the Kolyma in Siberia, and to ascertain whether there was any foundation for the opinion of the natives of Indighirka and Kolyma that there existed a large tract of land to the north of the Polar sea. On Nov. 2, 1820, Wrangell arrived at Nijni-Kolymsk, and in the beginning of 1821 made a northern journey on sledges drawn by dogs, and sailed up the Kolyma some distance into the interior, while others under his command explored the sea coast. In March, 1822, he renewed his journey, travelling upon the ice for 46 days, as far as lat. 72° 2′ N., without seeing any trace of land. He spent the summer months in an examination of the coast line to the mouth of the Kolyma. In Feb. 1823, he travelled as far as lat. 70° 51′ N. and long. 175° 27′ E., and returned to St. Petersburg in Aug. 1824. An account of this expedition, drawn up by Engelhardt from the journals of Wrangell, was published in 2 vols. at Berlin in 1839, and an English translation of it by Mrs. Sabine appeared in 1840 under the title of "Wrangell's Expedition to the Polar Sea in 1820-'23." In 1841 the complete report of the expedition was published under the title of "A Journey on the Northern Coasts of Siberia and the Icy Sea" (2 vols., St. Petersburg). In 1825, as commander of the sloop of war Krotkoi, Wrangell made a voyage around the world, and upon his return in 1827 was appointed governor of Russian America. He repaired to his post in 1829 by way of Siberia and Kamtchatka, and remained there 5 years. Among other efforts to improve the condition of the Russian possessions, he labored to introduce the cultivation of the potato, and also collected many valuable geographical and ethnographical notices of those regions, which were partly published in St. Petersburg in 1839 in the "Communications in regard to the Russian Possessions on the North-West Coast of America." In 1836 he gave an account of his return journey, which he made by way of the isthmus of Panama and the United States. He was now made rear admiral, was for a long time director of the ship timber department in the ministry of the navy, and in 1847 was made vice-admiral. He resigned his office in 1849 to become director of the Russian American company. In 1854 he became chief director of the hydrographical department of the ministry of the navy; in 1855 chief assistant to the high admiral Constantine; and in 1858 a member of the council of the empire, which office he still holds, with the rank of admiral and general aide-de-camp.

WRANGLER, Senior, a term applied in the university of Cambridge, England, to the undergraduate who passes the best public mathematical examination for the bachelor's degree. Previous to the examination for degrees, those wishing to "go out in honors," as it is called, whether mathematical or classical, signify their intention, and are examined separately from the other candidates, who are called *οἱ πολλοι*, or, in university parlance, "the Pol." At the close of the last day of examination those candidates for honors who deserve the distinction are arranged in order of merit in 3 lists or classes, of which the highest is called that of wranglers, the next that of senior optimés, and the lowest that of junior optimés—the whole constituting what is known as the mathematical tripos. Hence the senior wrangler, or the highest in the list of wranglers, is the most distinguished mathematician of the year. The word is derived from the practice which formerly required candidates for degrees to exhibit their powers in public disputations.

WRASSE, the common name of the spiny-rayed fishes of the family *labridæ* comprised in the genus *labrus* (Cuv.). The mouth is protrusible, with double large and fleshy lips, and jaws armed with formidable conical teeth in a single row, or with smaller and crowded ones in a second row; no teeth on palate, but broad grinders on the coalescent lower pharyngeal bones; scales large, thin, and cycloid, with lateral line interrupted, and cheeks and gill covers scaly; there is a single long dorsal, the spines of the anterior portion being surmounted by short membranous filaments, and the posterior having soft and split rays; ventrals under pectorals; air bladder simple and strong, and stomach without pyloric cæca. The species are numerous, especially in the tropical seas, and are of moderate size, stout form, and beautiful colors; they are also called rock fish and old wives. They are generally seen in troops among the rocks, hiding under sea weeds, and feeding on the crustaceans, mollusks, and sea urchins which there congregate; they bite eagerly, and are often caught by baits intended for other fish, as their flesh is not much esteemed, being generally used as bait. In the temperate regions they spawn in April, the young, about an inch long, being numerous about the rocks in summer; some of the Mediterranean species spawn twice a year. One of the most common species in the temperate seas of Europe is the ballan wrasse (*L. maculatus*, Bloch), about 18 inches long, varying greatly in color, being blue or green with orange spots, or entirely of different shades of the latter; the colors change rapidly after death. The striped wrasse (*L. variegatus*, Gmel.) is of a general orange color, reddish on the back, yellowish below, with the sides striped with blue, and the fins blue and orange; the female is very unlike the male; it is found in the same waters. The rainbow wrasse (*julis vulgaris*, Cuv.) has the lateral line uninterrupted and the head without scales; the colors are varied, orange, blue, yellow, and silvery; it is common in the Mediterranean, and at Nice is considered good eating. The gilt-headed wrasse (*crenilabrus tinca*, Risso) has the edge of the preoperculum denticulated; it is about 6 inches long, red varied with green, fins greenish blue, and head blue, with reddish orange stripes and spots on the cheeks; it is found on the English coasts. These fish are represented on the North American coast by the salt water perch (*ctenilabrus cæruleus*, De Kay) and the tautog or black fish.

WRAXALL, Sir Nathaniel William, an English author, born in Bristol, April 8, 1751, died in Dover, Nov. 7, 1831. He went out to Bombay in 1769 in the civil service of the East India company, and in 1771 accompanied the expedition against Guzerat and Baroach as judge advocate and paymaster. In 1772 he returned to Europe, and during the next 7 years he visited various parts of the continent. In 1774–'5 he was employed upon a confidential mission from the queen of Denmark, Caroline Matilda, then at Zell, to her brother George III. of England. In 1780 he entered parliament as a supporter of Lord North, but he afterward became an adherent of Pitt. He was created a baronet in 1813. An action for libel was brought against him in 1815, by Count Woronzoff, the Russian ambassador, whom he had accused of complicity in the murder of a German princess, and he was sentenced to pay a fine of £500 and to suffer six months' imprisonment, but was released after a confinement of three months. He wrote "Cursory Remarks made in a Tour through some of the Northern Parts of Europe" (1775); "Memoirs of the Kings of France of the House of Valois, to which is added a Tour through the Western, Southern, and Interior Provinces of France" (1777); "The History of France from the Accession of Henry the Third to the Death of Louis the Fourteenth" (3 vols. 4to., 1795); "Memoirs of the Courts of Berlin, Dresden, Warsaw, and Vienna" (1799); "Historical Memoirs of my own Time" (3 vols. 8vo., 1815); and "Posthumous Memoirs of his own Time" (3 vols., 1836). His works are written in a light, gossipping vein, and betray no little credulity and weakness of judgment; but the author had so many opportunities for observation and so much curiosity, that they still possess considerable value.—FREDERIC CHARLES LASCELLES, an English author, grandson of the preceding, born in Boulogne in 1828. He was educated at St. Mary's hall, Oxford, studied modern languages on the continent, and in 1855 was appointed assistant commissary of the field train in the Turkish contingent, with the rank of captain. He served in this capacity at Kertch until the close of the Crimean war, and has detailed his military experience in a work entitled "Camp Life" (1860). He has been a frequent contributor to periodical literature since 1850, had charge of the "Naval and Military Herald" in 1858, and from Jan. 1860, to March, 1861, was editor of "The Welcome Guest." He has translated several works from the French and German, edited the despatches of Sir James Outram (privately printed), and published a "Handbook to the Armies of Europe" (1855); "Wild Oats," a novel (1857); "Armies of the Great Powers" (1859); "Only a Woman," a novel (1862); and "Life on the Sea."

WRAY, JOHN. See RAY.

WREN, the name commonly applied to the diminutive tenuirostral birds of the creeper family and genus *troglodytes* (Vieill.); they come near the dentirostral birds, and by some have been placed by the side of the golden-crested warbler or kinglet (*regulus cristatus*, Ray), also itself called wren. In the wrens the tarsi are long and slender; the toes long, the outer longer than the inner, the latter being free; bill slightly curved, with tip entire; wings short and rounded, the 4th to 6th quills equal and longest; tail short, rounded, and usually erect. There are about 50 species in various parts of the globe, of which one of the best known is the common European or kitty wren (*T. parvulus*, Koch). It is 4 inches long, reddish brown above, barred with dusky and with white spots on the wings, and yellowish white below. It is very lively, frequenting gardens and hedges, and flitting from bush to bush with a direct flight, in search of insects, seeds, and fruits; though familiarly approaching the habitations of man, and sharing the affection of the people for the robin red-breast, it is more shy than the latter, concealing itself when approached too nearly; in winter it often roosts in cow houses for the sake of the warmth, and great numbers together take shelter in holes and the nests of the preceding summer; the males in spring and summer have a sweet song, and one apparently too loud to come from so small a throat. The nests are begun early in April, in holes and crevices of walls, banks, and roofs of thatch, among climbing plants, or on branches of trees, and are composed principally of hay and moss, lined with feathers; they are comparatively large, oval, domed above, with the opening at the end or on the side; the eggs are 6 to 10, and even 16, and incubation lasts 10 days, the males feeding the females, and both very attentive to the young; 2 broods are raised in a season. It is a permanent resident all over Europe, most abundant in the north.—The golden-crested wren (*regulus cristatus*, Ray), though not strictly belonging to this group, may be mentioned here. It is 3½ inches long, yellowish olive-green above and yellowish gray below, with an orange-yellow crest bordered on each side with black. Though a permanent resident in Great Britain, considerable numbers come from the north in winter; they are fond of fir woods, very sociable with the titmice and creepers, hopping actively from branch to branch and clinging in various positions to the twigs in search of small insects. The nest is neat and cup-shaped, made of moss and lined with feathers, so suspended from 3 or 4 twigs that the branch shelters the opening; the eggs are 6 to 10; the female is very bold when hatching, and both sexes are very attentive to the young; the song is soft and pleasing. There are 2 nearly allied species of this genus in North America, the ruby-crowned and golden-crested wrens, the *R. calendula* and *satrapa* of Lichtenstein, the former with a concealed crimson and the latter with an orange-red crown.—Of the North American true wrens, the largest is the great Carolina (*thryothorus Ludovicianus*, Bonap.), 6 inches long and 8¼ in alar extent;

it is reddish brown above, brightest on the rump, the wings and tail barred with darker; throat and streak over eyes whitish; lower parts pale yellowish rusty with under tail coverts barred with black. It is found as far north as Pennsylvania, west to Missouri, and south to Texas; it is very lively, like the other species reminding one of the mouse among mammals, as it darts in and out of crevices; it is very fond of the vicinity of water, and many are destroyed by minks and weasels; the eggs are 5 to 8, broad oval, grayish white with reddish brown spots; 2 or 3 broods are reared in a season.—The long-billed marsh wren (*cistothorus palustris*, Cab.) is 5½ by 5¾ inches, with the bill as long as the head, and the tail short and much graduated; it is reddish brown above, blackish on the crown, between the shoulders, and on wings and tail; streaks on neck, bars on tail, and lower parts white, the sides and under tail coverts light brown. It is found throughout North America to Greenland, among sedges and reeds along the sea shore and rivers, where it makes a nest of the shape and size of a cocoanut, of grasses so interwoven as to include several stems, the small entrance being on the side; eggs 6 to 8, chocolate and oval; 2 broods are raised in a season, a new nest being made for each; the food consists of minute aquatic insects and mollusks. The *C. stellaris* (Cab.) is smaller, with a shorter bill, and is found in the United States as far west as Missouri.—The best known species is the house wren (*troglodytes œdon*, Vieill.), 5 by 6½ inches; it is reddish brown above, barred with dusky, and pale fulvous white below with a light brownish tinge across the breast. It is found in the eastern United States to Missouri; it is much more familiar than the European wren, and a far superior songster; it builds near houses and in boxes prepared for it, sometimes in strange places, as in unused carriages, the sleeve of a coat forgotten in an outhouse, or in the old hats which are occasionally made to fill the space of a broken pane of glass; the males are very pugnacious, attacking and driving off birds twice their size intruding on their retreats; they have a special antipathy to cats, and to the martin, bluebird, and swallows, often appropriating the boxes occupied by these birds; the nests are made to fill the boxes, and to effect this a large amount of the most heterogeneous material is sometimes collected; the eggs are pale reddish, 5 or 6 in number, and 2 broods are raised in a season. The wood wren (*T. Americanus*, Aud.) is very similar to the last in size and colors, but has a shorter and stouter bill, a more graduated tail, with darker hues above and below. The winter wren (*T. hyemalis*, Vieill.) it is almost impossible to distinguish from the *T. parvulus* (Koch) of Europe; it is found generally throughout North America, migrating from Labrador to Louisiana; the song is very loud, musical, and long continued, in the opinion of Audubon excelling that of any other bird of its size, and the more pleasing as coming from the gloomy swamps and dark woods in which it delights to dwell; it springs, like all wrens, from its powerful legs and feet.—There are several other allied genera in western South America, Asia, and Africa. The lyre bird (*menura superba*, Dav.), as large as a fowl, previously described, belongs to the group of wrens.

WREN, Sir Christopher, an English architect, born in East Knoyle, Wiltshire, Oct. 20, 1632, died Feb. 25, 1723. His father, Dr. Christopher Wren, was chaplain in ordinary to Charles I. and dean of Windsor; and his uncle, Dr. Matthew Wren, was bishop of Ely, a severe and unrelenting churchman, who by order of parliament was impeached and suffered an imprisonment of 20 years in the tower, from which he was not released until the restoration. Young Wren, after remaining a short time at Westminster school, was in his 14th year entered a gentleman commoner at Wadham college, Oxford, where he was considered "a miracle of a youth" and "a rare and early prodigy of universal science." In 1650 he took his degree of B.A. at Wadham college, and in 1653 that of M.A., immediately after which he was elected a fellow of All Souls' college, Oxford. Previous to this time his mechanical genius had exercised itself in a variety of useful inventions, among which may be enumerated the wheel barometer, a register of the force and duration of the wind, methods of writing in the dark and of making several copies at once, the art of engraving in mezzotint (expressly claimed for him by his son), a method of drawing in perspective, improvements in weaving, in planting seeds, &c.; and he had also written papers on astronomy, on instruments of scientific application, on ship building, fortification, harbors, whale fishing, the easiest method of finding the longitude, and many other topics. He now became the intimate associate of a body of scientific men whose meetings laid the foundation of the future royal society. In 1657 he was elected professor of astronomy in Gresham college, London, and 3 years later Savilian professor of astronomy at Oxford. Previous to this time he had written nothing upon architecture, nor had he been known as an authority upon the subject, or as one who had made any study of it, except in a general way. Hence his appointment in 1661 as assistant to Sir John Denham, the surveyor-general, must be considered simply as a tribute to his general scientific attainments. In 1663 he designed the chapel of Pembroke college, Cambridge, and in the same year was commissioned to make a survey of St. Paul's cathedral, then in a very dilapidated condition, with a view to restoring or rebuilding it so as to adapt the whole structure to the famous Corinthian portico added by Inigo Jones. A visit to Paris at this time formed the whole of his continental travels, and henceforward he was almost exclusively employed in great public architectural works, evincing of a sudden such a fertility of resources, such extensive knowledge, and such a propriety in his general ideas, that his efforts have been aptly described as the result of "an intuition closely resembling inspiration." His plans for the restoration of the cathedral, now preserved in the library of All Souls' college, were soon prepared, and gave rise to protracted discussions, in the midst of which occurred the great fire of London (1666), a fortunate event for Wren, however calamitous in itself, as it afforded an opportunity for the exercise of his architectural abilities on a more extended scale. With a view to rebuilding the burnt district on a uniform and improved plan, Wren, in obedience to the royal command, made an exact survey of the whole area, and submitted a scheme which provided for a noble quarter, with wide and regular streets, frequent squares and piazzas, and a line of commodious quays along the Thames. The property owners, however, were indifferent to his suggestions, and as each man preferred to build his house up again upon his own spot of ground, the same narrow thoroughfares were preserved as of old, and thus was lost the opportunity to remove from the city of London the reproach, well stated by Wren himself, of being "the most unadorned of her bigness in the world." Nevertheless, he found abundant employment in the erection of public buildings and churches in lieu of those destroyed by the fire. The first of these in importance, if not in date, is the new cathedral of St. Paul's, the great achievement of his life. The first plan for this edifice designed by Wren was in the form of a Greek cross, and of a single order in height, with a dome as large as that of St. Peter's—an arrangement well adapted to a Protestant place of worship. But the duke of York, afterward James II., with a view to the future introduction of the ceremonials of the Roman Catholic service, insisted upon certain modifications, to which Wren was most reluctantly compelled to conform, and which resulted in the adoption of the present form of the Latin cross. The side oratories, which he was also obliged to add to the original design, marred so greatly the beauty of the building, that he is said to have shed tears in speaking of the change. The first stone of St. Paul's was laid June 21, 1675, and 35 years later Wren had the satisfaction of seeing the last stone on the summit of the lantern laid by his son Christopher, a result rarely witnessed by the architect of so considerable a work, and one particularly gratifying to Wren, in view of the opposition and contumely that he had continually to encounter during its progress. Beside St. Paul's, he designed upward of 53 churches in London, of which 50 were intended to replace those destroyed in the great fire. The exteriors have little to boast of, the confined and obscure positions which the buildings occupy affording but slight opportunity for architectural skill; but the *campanili* or steeples and the interiors are often conceived with great taste. Among the most famous are St. Mary-le-Bow, St. Bride's in Fleet street, and St. Stephen's in Wallbrook, the last named being particularly noted for its exquisitely beautiful interior. His remaining works include the royal exchange and the custom house, both subsequently destroyed by fire, the Monument, Temple Bar, and the college of physicians, all in London; the hospitals at Greenwich and Chelsea; large additions to the palaces of Hampton Court and St. James's; the west front and towers of Westminster abbey; a palace at Winchester for Charles II., now used as barracks; the gateway tower of Christchurch college, Oxford, and the Sheldonian theatre and Ashmolean museum in the same city; beside various college chapels and other buildings for both the universities. To the reproach of Wren's contemporaries, it is related that he was constantly assailed by the sneers and reproaches of envious rivals, who finally brought anonymous charges of fraud against him in connection with the building of St. Paul's, from which he was fully absolved by government and the general verdict of the public. Upon the accession of George I. court influence was brought to bear against him, and at the age of 86 the illustrious architect of St. Paul's, and the greatest mathematician of his age except Newton, while yet in the full vigor of his powers, was turned adrift to make room for one whose incompetency caused his dismissal from office within a twelvemonth. Wren passed his latter years at Hampton Court, and to the very end of his blameless career was actively engaged in his favorite studies. He was buried in the crypt of St. Paul's, and a black marble slab, with the inscription, *Si monumentum requiris, circumspice*, marks his tomb. He was knighted by Charles II. at Whitehall in 1673, and between 1685 and 1713 represented various boroughs in parliament. He was in 1680 elected president of the royal society, and in 1684 comptroller of the works in Windsor castle. An engraving representing in one extensive group all the edifices erected by him was published in 1842 by C. R. Cockerell. The most authentic record of his life is to be found in the "Parentalia," commenced by his son Christopher, and finished in 1750 by his grandson Stephen Wren.

WRIGHT. I. A N. co. of Iowa, intersected by the Boone and Iowa rivers; area, 625 sq. m.; pop. in 1860, 658. The surface is generally undulating and the soil fertile. The productions in 1859 were 2,090 bushels of wheat, 13,951 of Indian corn, 1,595 of oats, 2,982 of potatoes, 10,343 lbs. of butter, and 1,868 tons of hay. Capital, Ontario. II. A central co. of Minnesota, bounded N. E. by the Mississippi and S. E. by Crow river and its S. fork; area, 708 sq. m.; pop. in 1860, 3,729. The surface is undulating and diversified by prairies, forests, and numerous small lakes. Capital, Monticello. III. A S. co. of Missouri, drained by the Gasconade river and the head streams of White river; area, about 750 sq. m.; pop. in 1860, 4,508, of whom 66 were slaves. The surface is moderately hilly and the soil fertile. The productions in 1850 were 8,631 bushels of wheat, 194,695 of Indian corn, 32,730 of oats, and 67,265 lbs. of butter. Capital, Hartville.

WRIGHT, Elizur, an American author and journalist, born in South Canaan, Litchfield co., Conn., Feb. 12, 1804. He removed with his father in 1810 to Tallmadge, Ohio, where he lived on a farm till 1822, when he entered Yale college, and was graduated in 1826. During the next two years he was a teacher in the Lawrence academy at Groton, Mass. From 1829 to 1833 he was professor of mathematics and natural philosophy in Western Reserve college, Hudson, Ohio. Having warmly embraced the principles of the abolitionists, he removed to New York in 1833, and became secretary of the American anti-slavery society, in which post he continued for 5 years, and during part of that period was editor of the "Quarterly Anti-Slavery Magazine." He removed to Boston in 1838, and in April of the following year became editor of the "Massachusetts Abolitionist." For several years subsequently he remained connected with the newspaper press, and in 1846 established the "Chronotype" newspaper, which he conducted till it was merged in the "Commonwealth" (1850), of which also he was for a time the editor. In April, 1858, he was appointed to the office of insurance commissioner of Massachusetts, which he still holds. Mr. Wright has published a translation in verse of La Fontaine's "Fables" (2 vols. 8vo., London, 1843; 1 vol. 8vo., Boston, 1846), which has attained considerable popularity both in this country and in Great Britain.

WRIGHT (DARUSMONT), Fanny, a social reformer and philanthropist, born in Dundee, Scotland, about 1796, died in Cincinnati, Ohio, Jan. 13, 1853. She was left an orphan at the age of 9, and was indoctrinated by her guardian with ideas founded on the philosophy of the French materialists. Upon becoming of age she undertook a tour of travel in the United States, which embraced a period of 3 years, from 1818 to 1820, and of which she published an account entitled "Views on Society and Manners in America." Soon after appeared her "Few Days in Athens," a defence of the Epicurean philosophy. In 1825 she returned to America, and purchased 2,000 acres of land in Tennessee, including part of the present site of Memphis, where she established a colony of emancipated slaves, whose social condition she endeavored to elevate for the purpose of proving the equality of the white and black races. The experiment eventually failed for reasons never satisfactorily explained, and the negroes were sent to Hayti. She then appeared as a public lecturer in the eastern states, where her attacks upon negro slavery and other social institutions attracted large and enthusiastic audiences, and led to the establishment of what were called "Fanny Wright" societies. Her visits were subsequently extended to the principal cities of the Union, but the enunciation of views similar to those contained in her "Few Days in Athens" met with very decided opposition, and her efforts for the reformation of society proved on the whole unsuccessful. About 1838 she was married in France to M. Darusmont, whose system of philosophy resembled her own; but they separated after a few years, and Madame Darusmont, who continued to be known by the name of Wright, established herself with her daughter, the sole fruit of her marriage, in Cincinnati, where she resided until her death. Ill health, and the embarrassments arising from a suit brought by her husband to obtain possession of her property, interfered with her public labors as a lecturer, and the latter years of her life were passed in retirement.

WRIGHT, Silas, an American statesman, born in Amherst, Mass., May 24, 1795, died in Canton, St. Lawrence co., N. Y., Aug. 27, 1847. He was graduated at Middlebury college in 1815, studied law at Sandy Hill, N. Y., was admitted to the bar in 1819, and established himself as an attorney at Canton. In 1820 he was appointed surrogate of the county. In 1823 he became a member of the state senate, and in that body steadily opposed the political advancement of De Witt Clinton, which he regarded as dangerous to the democratic party, of which throughout his life he was a firm adherent. In 1827 he took his seat as a member of the federal house of representatives, and there advocated and voted for the protective tariff of 1828. He also voted for the appointment of a committee to inquire into the expediency of abolishing slavery and the slave trade in the District of Columbia. In 1829 he was appointed comptroller of New York, which office he held until 1833, when he was chosen to serve as the successor of Mr. Marcy for 4 years in the U. S. senate, of which, by reëlection, he remained a member for 11 years. He supported Mr. Clay's compromise bill in 1833; defended President Jackson's removal of the deposits; opposed the recharter of the U. S. bank; voted against receiving a petition for abolishing slavery in the District of Columbia, and in favor of excluding from the mails all "printed matter calculated to excite the prejudices of the southern states in regard to the question of slavery;" opposed the distribution among the states of the surplus federal revenues; supported the independent treasury scheme of President Van Buren; voted in 1838 against the resolution offered by Mr. Rives of Virginia declaring that the citizens of the states had no right to interfere with the question of slavery in the federal territories, and that the people of those territories had the exclusive right to settle that question for themselves; opposed the bill which was passed in 1842 requiring the states to choose members of congress by single districts; voted for the tariff of 1842, though most of his political associates in the senate voted against it; and voted for the annexation of Texas to the Union. He refused to be made a justice of the U. S. supreme court; to be a candidate for the presidential nomination after it was certain that the democratic national convention would not nominate Mr. Van Buren; and declined the almost unanimous nomination of the same convention as a candidate for the vice-presidency. In 1844, against his will, he was nominated by his party to be governor of New York, and was elected. President Polk offered him the office of secretary of the treasury in 1845, but he declined it. As governor he opposed in 1845 the calling of a convention to revise the state constitution; vetoed a bill appropriating money for works on the canals, on the ground that the effect of the bill was to resume the enlargement of the canals, which had been suspended by law in 1842, out of regard for the financial safety of the state; and recommended legislation against the anti-renters, and on occasion of disturbances produced by them in Delaware co. in 1845 proclaimed the county to be in a state of insurrection and called out a military force. Nominated for reëlection in 1846, he was defeated by the whig candidate. When, in April, 1847, the application of the Wilmot proviso to the territories obtained from Mexico was under discussion, Mr. Wright emphatically declared that the arms and the money of the Union ought never to be used to acquire territory now free for the purpose of planting slavery upon it. In May, 1847, he wrote a letter expressing himself in favor of using the money of the federal government to improve the harbors of the northern lakes.—On leaving the executive office at Albany, Mr. Wright, who was a man of the simplest habits, returned to the little farm of some 30 acres at Canton, whose cultivation with his own hands had always been a favorite pursuit. On a blazing day in June, 1847, a friendly visitor "found him hoeing a field of potatoes. In his dress as well as occupation he looked in every particular a common laboring farmer. He paused from his work as I addressed him, and leaning on his hoe and wiping from his face the perspiration caused by an intensely hot sun, received me with his usual ease and propriety of language." Another writer says that "Mr. Wright felt the utmost abhorrence of any thing like fiction in equipage, manners, politics, or the style and mode of living." "His first business," says another, "after his annual return from Washington, while he was senator, was to take his wheelbarrow, and go to the village mill and purchase his flour and meal."—Mr. Wright died suddenly of apoplexy. A man of clear and powerful but not showy mind, thoroughly informed upon public affairs, modest, sincere, and conscientious, his early death was a national calamity. "Grave reasoning," says Mr. Benton, "was his forte. Argumentation was always the line of his speech." "A candor which knew no guile," adds the same author, "an integrity which knew no deviation, which worked right on like a machine governed by a law of which it was unconscious, were the inexorable conditions of his nature, ruling his conduct in every act, public and private."

WRIGHT, Thomas, an English philanthropist, born in or near Manchester in 1788. He was employed for 47 years in a Manchester iron foundery, and devoted nearly one third of his wages to the relief of prisoners, visiting them in gaol, and obtaining employment for those who were discharged. He visited repeatedly the prisons of London, the hulks, and many of the provincial and convict prisons of England and Scotland. In 1852 a subscription was commenced in Manchester and Liverpool, by which £3,246 was raised and invested in order to relieve him from the necessity of daily labor, that he might devote himself entirely to the work of social reform. He was the means of founding a reformatory in Manchester for vagrants and vicious children, and several ragged schools and Sunday schools there and elsewhere, and holds religious services for poor children every Sunday.

WRIGHT, Thomas, an English author and antiquary, born in Wales, April 21, 1810. He was graduated at Trinity college, Cambridge, and has devoted himself to the study of English history, literature, and antiquities. He was one of the founders of the Camden society, and of the British archæological association, whose journal he edited for several years. Of the Percy society and the Shakespeare society he has also been an active member, and in 1842 he was chosen a corresponding member of the French academy of inscriptions. He has edited a very great number of the rare works connected with early English literature and history which have been published in England by the societies above mentioned, and otherwise, within the last 25 years, and has also published "The History of Ireland" (3 vols., London, 1857), "Dictionary of Obsolete and Provincial English" (1858), and "History of France" (2 vols., 1858-'60).

WRIT (in Norman French and law Latin, *breve*), a word used from very early times to designate any judicial process or precept, by which the sovereign, whether state or person, commands the proper executive officer, usually the sheriff, or in the courts of the United States the marshal, to do some act. It must be attested by a judge, usually the chief justice of the court to which it is returnable, who thus bears testimony to the fact that the command is lawful and issues from the sovereign; and this attestation of the court or judge is certified by the clerk of the court. In England all writs begin: "Victoria, queen, &c., to the sheriff," &c.; in the United States: "The United States of America to," &c.; or, "The people of the state of New York to," &c.; or, "The commonwealth of Massachusetts to, &c."—The ancient writs of the law were very numerous. Many of them are now obsolete, but those which remain in use are too many to be described within our limits, or even to be named. It may be said, however, that a general division is into: 1, original writs, by which all suits at law are begun; 2, writs of mesne process, which issue in the intermediate proceedings; and 3, writs of execution, by which the final judgment or decree of the court is carried into operation.

WRITERS TO THE SIGNET, in Scotland, where lawyers generally are called writers, a class of that profession who are entitled to conduct causes before the higher courts. They were originally clerks in the office of the secretary of state, where was deposited the seal by which the king's letters or writs for the purposes of justice were authenticated; and they still retain the special privilege of signing the summonses by which an ordinary action is brought in the court of session, although such causes may be conducted by a member of one of the other privileged bodies. In other respects their privileges differ but little from those enjoyed by other practitioners before the supreme courts.

WRITING, the art of expressing ideas by visible signs or characters inscribed on some material, including in its broadest sense the hieroglyphic and pictorial systems of the ancients, and of many modern barbarous nations. It is of two sorts: either it is composed of figures representing objects by an imitation of their forms, or by some symbolical indication of their nature or properties; or it represents the sounds which are used in spoken language to express those objects. In the former case it is called ideographic; in the latter, phonographic. Of the origin of this art nothing is positively known. The Egyptians ascribed it to Thot; the Jews to Enoch, Adam, or God himself; the Greeks to Mercury or Cadmus; and the Scandinavians to Odin. The first step toward writing was in all likelihood the representation of external objects by a more or less rude imitation of their forms, without any indication of the accessories of time or place. With the progress of civilization a step in advance was made by the application of a symbolical signification to some of these figures, so that the picture of two legs, for instance, represented not only two legs but also the act of walking. The picture writing of the ancient Mexicans has been cited as an example of this system, but it belongs to a more advanced stage of civilization, many of the characters having a clear phonetic value. The Mexicans had no alphabetic system, however, their phonograms representing syllables or whole words. (See Mexican Picture Writing.) Pictures, abbreviated for the sake of convenience, gradually became conventional signs; but at what time men first conceived the idea of making these characters stand for the sounds of spoken language instead of the objects of visible nature, we have no means of knowing. Some writers indeed have gone so far as to assert that not merely phonetic but even alphabetic systems have always existed. The Chinese system combines ideographic and phonetic characters, some of the signs having been originally imitations of external objects, while others are the arbitrary representatives of words or sounds. The Chinese, however, never carried the art of writing to its full development into an alphabetic system. A nearer approach to this may be seen in Egyptian hieroglyphics, where we find not more than 800 or 900 hieroglyphs, a quarter or a third of which expressed more ideas than all the rest together. Some of them were ideographic, but as a general rule they may be said to have represented not things but sounds. Such at least was the opinion of Champollion, who contended that figurative, symbolic, and phonetic characters occur mixed in all the texts, the last predominating; but Seyffarth and his disciples go so far as to assert that all hieroglyphic writing was purely phonetic. The Egyptian characters were both syllabic and alphabetic. A singular system was employed in the latter. The figures of birds, animals, plants, utensils, or parts of the body were taken to express the initial letters of the words which they represented; the figure, for example, of an eagle (*akhom*) stood for *a*, of an owl (*moulag*) for *m*, &c. There were three kinds of writing. 1. The hieroglyphic, properly so called, was the earliest and rudest. It consisted altogether of pictorial images, but these might be interpreted in various ways. Sometimes they conveyed no idea but that of the object whose form they imitated; again they were to be understood metaphorically, as when "the wicked" was denoted by a man breaking his own head with an axe, suicide being considered the worst of crimes; and thirdly, they were used emblematically, as when two sorts of water plants were put for the "upper country" and "lower country." 2. The hieratic, or sacred, was derived from the hieroglyphic at least as early as the 9th dynasty. It consisted of both symbolical and phonetic characters, and was used by the priests and sacred scribes. 3. The demotic, or enchorial, was a simplified form of the hieratic, and a still nearer approach toward an alphabetic system. It was used for the vulgar dialect, and also in historical papyri. (See Hieroglyphics.) The Ethiopians are said to have had two graphic systems, one of which, probably the "royal letters" mentioned by Heliodorus, resembled the hieratic writing of the Egyptians, but no trace of it remains. They now use 182 syllabic characters, which may be decomposed into an alphabet of 26 consonants and 7 vowels, and these, with the addition of 7 new consonants, serve to transcribe the Amharic idiom, which for a long period has replaced the old Ethiopic as the language of common life. The early Babylonian or cuneiform inscriptions present a still stronger similarity to the Egyptian, so that the two are almost of necessity ascribed to the same origin. In one respect, however, they present a marked difference. In the hieroglyphic writing each character has but a single value, while in the cuneiform inscriptions the same letter is used to express a perplexing variety of sounds. (See Cuneiform Inscriptions.) The Sanscrit is written in a character called *devanagari*, of the origin of which not even Hindoo literature has any tradition. It seems to be of Semitic origin, is syllabic in its character, and possesses remarkable capacity for the representation of sounds. (See Sanscrit.) The Cufic writing, found on old coins of almost all Mohammedan nations, derives its name from the city of Cufah, in the pashalic of Bagdad. It is alphabetic, and probably derived from the Syrian. The characters are coarse, stiff, and not very legible. They were used in MSS. for 3 centuries after Mohammed, and on coins and sepulchral monuments for 7 centuries. (See Cufic Inscriptions and Coins.)—The origin of the alphabet is no better known than the origin of writing itself. Common belief ascribes it to the Phœnicians, from whom it was transmitted to the Greeks; but Klaproth gives the honor to the Chaldeans, basing his opinion upon the argument that the names of the letters, which must have come to the Greeks with the letters themselves, contain the emphatic *a*, which properly belongs only to the idioms of Syria and Chaldea. The final *a* is, in fact, found in the names of 12 of the 24 letters of the Greek alphabet, but it is lacking in all the others, many of which, there is every reason to suppose, are of equal antiquity with the others. Klaproth admits at least three different sources of the writing of the ancient world, namely, the Chinese, the Indian, and the Semitic. Other authorities reduce the number to two, the Chinese and Egyptian, the latter being the source of the Semitic, and through it of the Indian and European.—With regard to the manner or direction of writing, the utmost diversity exists among different nations. In the rudest systems of picture writing the figures were placed just as the convenience or caprice of the writer dictated. The Mexican picture writing is read by columns, beginning at the bottom, a method which has never been practised, so far as we know, by any other people. The Chinese and Japanese write in columns beginning at the top, and passing from right to left. The perpendicular direction is also followed by the Tartars. The Egyptian hieroglyphics were written either in columns or horizontal lines, according to the shape of the surface on which they were to be inscribed. In the latter case they proceeded indifferently from right to left or from left to right, the figures of men and animals always being turned toward the beginning of the line. The hieratic and demotic characters are always to be read from right to left, though, as Dr. Brugsch has ingeniously discovered, the individual letters were formed from left to right. In writing numbers they placed the units to the left, that is last, according to their mode of writing; thus 1863 would stand 3681. Ethiopic and cuneiform writings run from left to right, and this is the direction generally given to the writings of the Japhetic races of India and Europe, while the Semitic nations adopt the opposite course. Arabic writings are read from right to left, the Arabs saying that "it is more reasonable to see where the pen is coming than not to see where it is going;" but they arrange numerals as we do, in accordance with the general usage of the Hindoos, from whom their numerals were borrowed, though Tippoo Sultan on some of his later coins reversed the order. The Greeks in old times wrote from right to left, like the Phœnicians, and their imitators the Etruscans continued to do so until a very late period. The Greeks afterward adopted a style which has been compared to the furrows traced by a plough, and hence named βουστροφηδον, "the turning back of oxen;" the first line began at the right, the second at the left, and so on, each line commencing where the one before it left off. From this habit they passed to the modern European method.—In the ancient Greek as well as Roman MSS. all the words are written in uncial characters, and are separated neither by points nor by spaces. (See Punctuation.) The present cursive characters in Greek first occur in inscriptions of the reign of Augustus, and have been in common use since the 10th century of our era. The Germans at first wrote in Latin characters, their own alphabet not coming into common use until about the 13th century. The ancient nations of N. Europe seem to have written in an alphabet common to them all, called Runic; it has left no traces in modern European alphabets. Germany has two national alphabets: the *Fractur*, formed out of the so called new Gothic and monastic, which sprang up in the 11th century; and the later cursive. The various styles of writing in France are called by the names of the different races of kings in whose times they prevailed; as the Merovingian, Carlovingian, Capetian, Valesian, and Bourbon. There are no traces of writing in Britain before the Roman conquest, when Latin letters were introduced, and even these were not much used until the time of St. Augustin. What is called the Roman-Saxon, strongly resembling the Roman, prevailed from this time until the middle of the 8th century; the set Saxon succeeded it, lasting until the middle of the 9th; this was followed by the running-hand Saxon of the time of Alfred; the mixed Saxon, combining the Roman, Lombardic, and Saxon letters; and the elegant Saxon, which was introduced in the 10th century, and did not become obsolete until the middle of the 12th. The charters which remain in this style are remarkable for their small, round, neat, and extremely legible characters. The Norman style, quaint, affected, illegible, and composed of letters nearly Lombardic, came in with William the Conqueror. The modern Gothic dates in England from the 12th century; the old English from the middle of the 14th; the set chancery and common chancery from the latter part of the same century. The English court hand, a barbarous corruption of the Norman, was contrived by the lawyers in the 16th century, and lasted till the reign of George II., when it was abolished by law. In the northern parts of Ireland and Scotland characters similar to the Saxon prevailed until the end of the 16th century.—Among the various materials used for writing upon, at different times and in different countries, are leaves, pith, and bark of trees, papyrus, cloth, bones, skins, leather, stones, pottery, metal, wax tablets, wood, shells, and paper; and the principal instruments of writing are the chisel, the stylus of iron or bone, and pens of reed, quill, or metal. The chisel was used for monumental inscriptions. The Greek στυλος or Roman *stylus* was employed for writing upon tablets coated with a thin layer of wax. At one end it was sharpened like a pencil; at the other, which was used for obliterating what had been written and smoothing the wax surface over again, it was flat and circular. Hence *vertere stylum*, "to reverse the stylus," means to erase.—See Book, Ink, Paper, Papyrus, Parchment, Pen, and Pencil.

WROTTESLEY, John, baron, an English astronomer, born at Wrottesley, Staffordshire, Aug. 5, 1798, was graduated at Christchurch college, Oxford, in 1819, and was called to the bar at Lincoln's Inn in 1823. He has devoted himself principally to observations of the fixed stars at the observatories which he has built at Blackheath and Wrottesley, and by great patience and care has accomplished results of distinguished value. In 1839 he received the gold medal of the royal astronomical society for his catalogue of the right ascensions of 1,318 stars. He was chosen president of that society in 1841, and of the royal society in 1854.

WROXETER, a village of Shropshire in England, on the river Severn, 5½ m. from Shrewsbury. It is celebrated as the site of the ancient Roman city of Uriconium, or Viroconium, the remains of which are now being uncovered under the direction of Mr. Thomas Wright. Uriconium was described by Richard of Cirencester as "the mother of all the towns in this district, and reputed among the greatest cities of Britain;" and the recent discoveries among its ruins seem fully to justify his expressions. Roman antiquities have been picked up about Wroxeter from time immemorial, but no systematic excavation of the site was undertaken until Feb. 1859. Since that time a number of buildings have been unearthed, and a great quantity of pottery, coins, personal ornaments, and other curiosities collected. Skeletons have been found in the hypocausts, indicating that when the Roman city was sacked and burned some of the inhabitants took refuge in these places, and probably perished there from the effects of the conflagration. In one hypocaust was discovered the crouching skeleton of an old man with a coffer of money by its side. The coins proved to be chiefly of the Constantine family, with a few belonging to the period immediately preceding the Saxon invasion.

WRYNECK (*torticollis*), a surgical disease, dependent generally on contraction of the muscles, in which the head and neck are turned sideways, forward, or backward, according to the muscles affected. In rare instances it may arise from disease or displacement of the cervical vertebræ, and may then be congenital; the distortion may be produced by the contraction of cicatrices after burns, and by tumors. The disease is almost always muscular in its seat; an uncommon form arises from paralysis of the muscles of the opposite side, which may be temporarily corrected without pain to the individual, and should be treated by electricity and the usual remedies employed for paralysis; it may also be rheumatismal, pain being increased or excited by motion, and that position being assumed in which the greatest ease is obtained. It is generally of short duration, and is to be treated like other muscular rheumatism. It is sometimes inflammatory or neuralgic, the former occasionally noticed in weak children, and the latter in adults after tic douloureux, in both cases to be treated by rest, leeches, fomentations, and narcotic applications. The most usual form is the chronic wryneck caused by contraction of the sterno-mastoid muscles, in which the head is bent to one side (generally the right), and the face to the opposite, the right eyebrow and right corner of the mouth being elevated; the whole neck is distorted on the first dorsal vertebra in the direction opposite to that of the head and neck, requiring mechanical after the surgical treatment. Formerly this deformity was treated by tonics, various internal and external remedies (such as stimulating ointments and liniments), and mechanical contrivances; but, since Guérin (in 1838) first drew special attention to the subject, tenotomy or subcutaneous division of the tendons of the contracted muscles has been regarded as the remedy to be alone depended on. The usual operation is the division of the tendon of the sterno-mastoid muscle about half an inch above the sternal insertion, and is performed in a few seconds, without danger, pain, or loss of blood; it is sometimes necessary to divide the fibres of the *trapezius* and *platysma myoides* muscles.

WRYNECK (*yunx torquilla*, Linn.), a small bird of the woodpecker family, so called from its singular habit of turning the head in various directions; it has also been named snake bird for the same reason. It is about 7 inches long, of a rusty ash color, irregularly spotted and speckled with brown and black; the colors are prettily distributed, and the form is elegant. The bill is short, straight, and acute; the tongue extensile, ending in a simple horny tip; wings pointed, the 1st quill very short, and the 3d the longest; tail rounded, and its feathers soft; the 2 anterior toes joined together at their origin, and the 2 posterior unconnected. It is a summer visitor to Great Britain and N. Europe, spending the winter in N. Africa and the warm parts of W. Asia; it arrives in April and leaves early in September, so nearly at the same time with the cuckoo that it has been called the cuckoo's mate. Though having many of the habits of woodpeckers, it does not associate with them; the food consists principally of insects, especially ants and their pupæ or so called eggs, and sometimes elder and other berries; it is generally seen feeding on the ground; the eggs are 6 to 10, white, and laid in holes dug in the trees. There are a few other species in Africa. (For its family characters, see Woodpecker.)

WURMSER, Dagobert Sigmund, count, an Austrian general, born in Alsace, Sept. 22, 1724, died in Vienna in June, 1797. He was descended from a noble family, originally devoted himself to scientific studies, and served 3 years in the French army, but left it for the Austrian service, where he commanded a hussar regiment during the 7 years' war, attaining the rank of major-general. In 1773 he became proprietary colonel of a regiment of hussars, in 1778 field marshal lieutenant, and during the Bavarian war of succession commanded a special corps of the army in Bohemia. After the peace he was made commanding general in Galicia, and in 1787 general of cavalry. By the outbreak of the French revolution his family lost their estates in Alsace. He was appointed to the command of a *corps d'armée*, and with it crossed the Rhine between Mannheim and Spire, March 31, 1793, and gained several successes, but was obliged in December to recross the river, and in Jan. 1794, was superseded by the prince of Waldeck. Six months later he was appointed to the command of the Austrian forces on the upper Rhine, and captured the fortress of Mannheim. He then remained almost entirely inactive until May, 1796, when the critical condition of affairs in Italy after the defeat of Beaulieu led to the appointment of Wurmser to the command of the second Austrian army destined to act against Bonaparte. He marched at the head of 60,000 men, and obliged the French to raise the siege of Mantua; but the check received by Quosdannovich, who was driven back to the Tyrol, and the defeat of Wurmser's main body at Castiglione, Roveredo, and Bassano, rendered his situation extremely critical. He finally forced his way into Mantua, of which the blockade was resumed. A third Austrian army under Alvinzy was sent into Italy, but the defeat at Arcole prevented it from relieving him; and at length, in Feb. 1797, seeing the impossibility of any longer maintaining the defence, Wurmser surrendered Mantua to Gen. Bonaparte. He went to Vienna, and was made commanding general in Hungary, but died before reaching his post.

WÜRTEMBERG, a kingdom belonging to the German confederation, situated between lat. 47° 35′ and 49° 35′ N., and long. 8° 12′ and 10° 30′ E. Its greatest length from N. to S. is 140 m., its greatest breadth from E. to W. 100 m. It is bounded N. E. and E. by Bavaria, S. by the lake of Constance, which separates it from Switzerland, and by Hohenzollern and Baden, and W. and N. W. by Baden. It is divided into 4 circles, which, with their area, and their population in Dec. 1859, are as follows:

Circles.	Area, sq. m.	Population.
Neckar	1,284	499,007
Black Forest (Schwarzwald)	1,842	471,549
Danube	2,416	398,652
Jaxt	1,985	416,744
Total	7,527	1,785,952

Of the total population, 872,017 were males and 913,935 females. In the previous year, out of a population of 1,690,898, 1,157,650 were Protestants, 519,942 Roman Catholics, and 11,088 Jews. The principal cities and towns are Stuttgart, the capital, Ulm, Esslingen, Heilbronn, Reutlingen, Tübingen, Ellwangen, and Ludwigsburg. The Black Forest forms part of the western frontier, and sends off numerous ramifications into the interior of the country, but its steepest declivities and highest summits belong to Baden. The Hornisgrinde, 3,640 feet above the sea, is the highest summit in Würtemberg. The Swabian Alps are almost entirely in this kingdom, entering it from Hohenzollern, and stretching about 80 m. northeastward, with a breadth varying from 9 to 18 m. On the S. E. side they sink away in undulating hills; on the N.W. they are steep. They are not so high as the Black Forest, but bleaker. Its prevailing geological formation is limestone, while the characteristic rocks of the other range are sandstone and granite. The valleys between the mountains are very fruitful and picturesque. The Swabian Alps divide the kingdom into two river basins, that of the Neckar on the N. W., and that of the Danube on the S. E. The Neckar rises in the Black Forest, near the S. W. frontier of the kingdom, and flows generally N. E. and N., entering Baden at Mosbach, and afterward falling into the Rhine. Its principal affluents are the Kocher and the Jaxt, which join it on the right. The Danube rises in Baden, very near the sources of the Neckar, crosses Würtemberg in a N. E. direction, and enters Bavaria at Ulm. Its tributaries are much fewer than those of the Neckar, the largest being the Iller, which joins it on the right near Ulm, and forms a part of the eastern boundary. There are many small ponds or lakes, but no large sheets of water except the lake of Constance, only a small part of which belongs to Würtemberg. The soil of the mountain regions is comparatively sterile, but affords abundant pasturage and valuable timber. In the valley of the Neckar and on the shore of the lake of Constance the climate is exceedingly mild, and at Stuttgart the mean temperature is 54°. The whole area, comprising 4,830,556 acres, is divided as follows: corn land, 2,050,102 acres; gardens, 94,773; vineyards, 64,678; meadows, 687,653; pastures, 208,206; forests, 1,497,062; roads, 103,648; railways, 2,429; buildings, 21,777; barren lands, 68,844; lakes and rivers, 31,384. The kinds of grain cultivated are wheat (chiefly of the variety called spelt), maize, oats, barley, and rye. Root crops are invariably abundant, including turnips, mangel wurzel, beets, and potatoes; while peas, beans, vetches, flax, hemp, rape seed, hops, and tobacco are likewise grown in great abundance. The minerals of the country consist of copper, lead, zinc, and iron, marble, alabaster, millstones, freestone, gypsum, quartz, garnets, amethysts, agate, chalcedony, carnelian, opal, jasper, porcelain clay, basalt, fullers' earth, chalk, coal, and salt. Of the last named the annual produce amounts to 24,000 tons, the property of the government. The iron mines at Aalen and Wasseralfingen are exceedingly productive. The ore is prepared by smelting and by the hammer, and these mines supply the factories at Friedrichsthal, Christophsthal, Ludwigsthal, Abts-Gmünd, and Heidenheim. The chief manufactures of the country are linen, calico, woollen cloths, silk, muslin, lace, carpets, wooden clocks, porcelain, and earthenware. The linen trade employs the largest share of domestic industry. In the districts of the Eastern Alps and the Black Forest, nearly all the women are occupied during the winter in spinning at home, producing fine and coarse linen, and diaper and sail cloth. The chief seats of trade are Heilbronn, Cannstadt, Ulm, Stuttgart, Friedrichshafen, Reutlingen, Calw, and Tuttlingen. The exports include corn, cattle, timber, wool, linen, salt, wine, gold, silver, and jewelry; and the imports embrace raw cotton, cotton fabrics, silk, glass ware, wine, fruit, china, and all kinds of colonial produce. The exports generally exceed the imports in value. There is an important aid to the commerce of the country in the inland navigation, especially of the river Neckar, which is navigable from Cannstadt, and steamers reach below Heilbronn. The transit trade is of great value. A railway runs from Stuttgart, by way of Ulm, to Lake Constance. At Ulm the line forms a junction with the Bavarian line to Augsburg and Munich, and another line connects Stuttgart with Heilbronn, having important branch extensions to the trunk railway on the Rhine.—The government is a limited hereditary monarchy. There are two legislative chambers, one consisting of princes of the blood royal and the nobility, the other of deputies chosen by the citizens of the principal towns, bailiwicks, and colleges, and of the prelates of the Protestant and Catholic churches. There is perfect freedom of religion. The administration of affairs is intrusted to the ministers of justice, foreign affairs, the interior, war, finance, and ecclesiastical affairs. The national income for 1860 was 14,555,575 florins, the expenditure 14,240,956 florins. The public debt on May 4, 1861, was 67,594,192 florins. The army on a peace footing numbers 10,581 men, and on a war footing 26,885.—Würtemberg anciently formed a part of Swabia, one of whose dukes, Philip of Hohenstaufen, by selling or giving away portions of the hereditary estates, laid the foundation of numerous petty principalities, which in the 13th century became independent. (See SWABIA.) The founder of the reigning dynasty was Ulric, count of Würtemberg (1246–'65), whose possessions, however, only included the districts bordering on the Neckar and extending to the Black Forest. His successors Eberhard and Ulric II. made large additions to the county by conquest. In 1494 Eberhard V. was created duke of Würtemberg by the emperor Maximilian at the diet of Worms. The Lutheran faith was introduced about 1540, but for many years the professors of the reformed creed were subject to severe persecutions. Their rights were fully restored by the peace of Westphalia. Würtemberg, after the outbreak of the French revolution, was at different times the theatre of conflict between the contending armies, and in 1801 the last duke of Würtemberg, Frederic II., was obliged to cede Mompelgard to France. For this he subsequently received indemnity from Napoleon in the acquisition of several German imperial cities and an extension of territory. He was also created an elector of the empire in 1803. Three years later he assumed the title of king of Würtemberg, joining the Rhenish confederation, and established a uniform system of government and perfect religious equality throughout the kingdom. After the battle of Leipsic in 1813, Frederic forsook the cause of his former patron, and joined that of the allies. He died in 1816, and was succeeded by his son William I., the reigning king, who granted the present liberal constitution in 1819, a permanent modification of which was in vain attempted by the estates during the revolutionary period of 1848–'9.

WÜRZBURG, a fortified city of Bavaria, capital of the government of Lower Franconia, situated on the right bank of the river Main, which is here crossed by a stone bridge adorned with statues, 140 m. N. N. W. from Munich, on the railway from Frankfort to Bamberg; pop. in 1858, 36,052. It has 20 churches, among which are the cathedral of St. Kilian, dating from 742, the Marienkirche, the church of Haug, built after the model of St. Peter's at Rome, and the churches of Notre Dame and St. Briscard. The Julius hospital, of 500 beds, has an endowment of $3,000,000. There is a school of medicine and another of anatomy; a museum of natural history with a botanical garden attached to it; a university founded in 1403, and having 800 students and a library of 100,000 volumes; and numerous other schools and charitable and religious institutions. The Main is navigable for steamboats up to the city. Woollen and linen cloths, cutlery, glass, &c., are manufactured. The country around it is one of the best vine-growing regions of Germany.—Würzburg dates from the 7th century, when the dukes of Thuringia made it their residence. St. Boniface, or according to some authorities St. Kilian, made it a bishop's see in 761. It was for several centuries in the hands of bishop-electors, against one of whom the peasants unsuccessfully revolted in 1525. In

1796 Charles, archduke of Austria, gained a victory here over the French under the command of Marshal Jourdan, and by the peace of Lunéville the city passed into his hands. It was ceded in 1803 to Ferdinand, archduke of Tuscany, and came into the possession of Bavaria in 1815.

WYANDOT, a N. W. co. of Ohio, intersected by the Sandusky river; area, 350 sq. m.; pop. in 1860, 15,596. The surface is level, and diversified by prairie and woodland, and the soil is fertile. The productions in 1850 were 75,447 bushels of wheat, 349,094 of Indian corn, 66,522 of oats, 99,173 lbs. of wool, and 10,165 tons of hay. The county is intersected by the Mad river and Lake Erie, the Findlay branch, and the Pittsburg, Fort Wayne, and Chicago railroads. Capital, Upper Sandusky.

WYANDOTS, an Indian tribe, of the Iroquois family, with whose language theirs is essentially identical, called Hurons by the French, but calling themselves Wendats or Yendats. Mr. J. G. Shea, following the Jesuit fathers, makes their original residence to have been on Georgian bay; but Schoolcraft says that when the French settled in Canada they were established on the island of Montreal, when, according to other authorities, their total numbers were estimated to be 40,000 souls. It is certain that about the middle of the 17th century, having become Roman Catholics, and embraced the cause of the Algonquins and the French, they became involved in a war with their kinsmen the Iroquois, by whom they were nearly exterminated. They now abandoned their country, a part of them going to Charity island and thence to Quebec, where in the neighboring village of Lorette their descendants in 1821 numbered 137 souls, and in 1851–'2, 218. The remainder of the tribe, however, made their way south of the great lakes, and were found in 1659–'60 by some French traders 6 days' journey S. W. from Lake Superior. They next fixed themselves at the Noquet islands at the mouth of Green bay, whence they removed to La Pointe, and in 1670 were compelled by a war with the Sioux to betake themselves to Michilimackinac, whither they were accompanied by Father Marquette. Their next removal was to Detroit, whence they extended their hunting grounds S. to Sandusky. In 1778 this part of the tribe was estimated to contain 180 men able to bear arms. In the war of 1812 it furnished 100 warriors to the English forces. In 1829 there was a small band, about 40 in number, living on the river Huron of Lake Erie, in Michigan; but the principal portion of the Wyandots, estimated at 600 souls, was collected on the head waters of the Sandusky river. By a treaty of April 6, 1832, they sold their lands in Ohio to the U. S. government, and were removed, numbering 687 souls, to the junction of the Kansas and Missouri rivers, in the present state of Kansas, where they still remain. In 1836 a census was taken among them, showing their number to be 575 souls; and another census, under act of congress passed March 3, 1847, proved them to be 687 souls, in 117 families. By a treaty of Jan. 31, 1855, they acquired the right to become citizens, and the lands of the tribe were divided among them, giving to each person the ownership of about 40 acres.

WYATT, James, an English architect, born in Burton Constable, Aug. 3, 1746, accidentally killed near Marlborough, Sept. 5, 1813. Evincing while a boy a talent for designing, he was taken to Rome in 1760 by Sir William Bagot, and during the next 6 years industriously pursued his studies in architecture in that city and in Venice. Returning to London, he almost immediately brought himself into notice by his designs for the Pantheon, in Oxford street, a building for many years famous as the rendezvous of the fashionable world. He had innumerable commissions for private residences in all parts of the kingdom; but his designs, which are for the most part in a sort of Græco-Italian style, have little at the present day to recommend them. About 1782 he turned his attention to Gothic architecture, being one of the first to attempt its revival; and his mansion for Mr. Barrett at Lee Priory, near Canterbury, was highly extolled by Horace Walpole and others. For many years he was unrivalled as the restorer of ancient English architecture, but his restorations do not stand the test of modern criticism, and are now considered rather in the light of destructions. His most famous work in this style was Fonthill abbey, erected for Beckford, and now dismantled. He held the position of surveyor-general subsequent to 1796, and in 1802–'3 was president of the royal academy.—Several of his uncles, brothers, sons, and other relatives were also distinguished architects. Among these was Sir Jeffrey Wyatville, his nephew (born in Burton-on-Trent, Aug. 3, 1766, died in London, Feb. 18, 1840), who designed and superintended the alterations in Windsor castle, commenced in 1824, and whose name was changed on occasion of his being knighted in 1828.

WYATT, Matthew Digby, an English architect and writer on decorative art, born at Rowde, near Devizes, Wiltshire, in 1820. At the age of 16 he gained a prize for the best essay on "Grecian Doric," given by the architectural society; and in 1844, having for several years previous been a student in the royal academy, he went on a tour of study to the continent, where he passed two years. Among the fruits of this visit was an elaborate illustrated work prepared from his own drawings, and entitled "Specimens of the Geometrical Mosaics of the Middle Ages" (1848). In connection with this he also published a "Historical Notice of the Art," founded upon papers read by him before various societies. In 1849 he was commissioned by the society of arts to visit Paris and report upon the exposition held there in that year; and as secretary to the executive committee of the royal commission, he subsequently took an active part in the work of organizing the great exhibition of 1851 in Hyde park, and was particularly charged with superintending the erection of the building. He was next associated with Brunel in designing the new station of the great western railway at Paddington, and between 1852 and 1854 he was busily employed, in conjunction with Owen Jones and others, in decorating the crystal palace at Sydenham. In 1856 he was appointed surveyor to the East India company, in which capacity he has executed many important designs for public works in Great Britain and India, including several great bridges in the latter country. He is at present (1862) joint architect with Mr. Scott for the proposed new India office. His miscellaneous labors, both as decorator and architect, have been numerous, and he is a prolific author of works relating to the fine arts. Among these the most important are: "The Industrial Arts of the XIXth Century" (2 vols., with 160 plates in chromolithography), written in connection with his labors at the great exhibition of 1851; "Metal Work and its Artistic Designs" (1 vol. fol.); "The Crystal Palace and Park" (4to.); "Essay on Ivory Carving," published with photographic illustrations in a small folio by the Arundel society; essays on renaissance and Italian ornament, contributed to Owen Jones's "Grammar of Ornament;" "The Art of Illuminating" (4to., with plates in gold and colors); and historical and technical manuals of the art entitled "What Illuminating was," and "What Illuminating should be, and how it may be practised."

WYATT, Richard James, an English sculptor, born in London, May 3, 1795, died in Rome, May 28, 1850. He studied with Rossi in London and Bosio in Paris, and completed his professional education in the studio of Canova in Rome, where Gibson was his fellow student, and where he passed the last 30 years of his life. He excelled in poetic and classic subjects, and was particularly noted for the grace and fine proportions of his female figures. Among his most noticeable productions are his "Nymph entering the Bath" and "Nymph leaving the Bath," "Shepherdess with a Kid," "Musidora," and "Penelope." He also executed excellent portrait busts and rilievi. At the great exhibition of 1851 in London the medal for sculpture was awarded to him, though he had died a year previous.

WYATT, Sir Thomas, an English poet, born at Allington castle, Kent, in 1503, died at Sherborne, Oct. 11, 1542. He was graduated at St. John's college, Cambridge, in 1518, was a gentleman of the bedchamber to Henry VIII. in 1525, was one of Anne Boleyn's train when she went from Dover to Calais in 1532, officiated as ewerer at her marriage in 1533, was knighted March 18, 1536, and became high sheriff of Kent in 1537. In April, 1537, he was sent to Spain as ambassador to Charles V., which office he retained till June, 1539, when he returned to England, but was again employed at the court of that emperor, who was now in the Low Countries, from Nov. 1539, till May, 1540, after which he lived mostly in retirement in England. Fuller says that he was in love with Anne Boleyn, and fell into disfavor with Henry VIII. in consequence; but this is doubtful. His poems are neat and elegant, but lack genius.—Thomas, commonly called the younger, an English soldier, son of the preceding, born in Kent in 1520, beheaded on Tower hill, April 11, 1554. In 1543 he was imprisoned in the tower for aiding the earl of Surrey to break the windows of citizens of London, from 1545 to 1550 commanded at Boulogne, and in 1554 led the Kentish insurgents in the duke of Suffolk's conspiracy on occasion of the proposed marriage of Queen Mary with Philip II., entered London at the head of his followers, and after a fight in the streets was captured, Feb. 7. The execution of Lady Jane Grey followed on the 12th and Suffolk's on the 13th, while Wyatt's did not take place till two months later.

WYCH HAZEL. See Witch Hazel.

WYCHERLY, William, an English dramatist, born at Clive, near Shrewsbury, about 1640, died in Dec. 1715. At 15 years of age he was sent to France to complete his education, and frequented the court of the duke de Montausier, governor of Angoulême. He was here converted to the Roman Catholic faith, and for the purpose of winning him back to Protestantism, he was, on his return to England at the restoration, entered of Queen's college, Oxford, where the desired change was effected, although, according to Pope, he died a Roman Catholic. He afterward became a student of law in the Middle Temple, but was probably never called to the bar. About 1670 he produced with great success his first play, "Love in a Wood, or St. James's Park," composed, according to his own account, when he was but 19 years of age. Being then a fashionable young man about town, of remarkably handsome person and lively address, he attracted the favorable notice of the duchess of Cleveland, the king's mistress, who introduced him at court, and, according to Voltaire, used to visit him at his chambers in the Temple in the guise of a country girl. The duke of Buckingham took him into his service, the king subsidized him liberally, and he became one of the most noted wits and gallants of the time. During this prosperous period he produced his three remaining plays, "The Gentleman Dancing-Master" (1671), "The Plain Dealer" (1674), and "The Country Wife" (1678), all of which were received with great favor, and, as illustrations of the period in which they were written, constitute a permanent and valuable addition to English dramatic literature. The plots and characters, however, have little pretension to originality, and the general tone of licentiousness pervading them is so marked that not all "the satire, wit, and strength of

Manly Wycherly," as Dryden expressed it, can make them popular on the stage again. About 1680 Wycherly married the dowager countess of Drogheda, whose jealousy and never-failing watchfulness considerably interfered with an indulgence in his former pleasures. She died soon, however, leaving him the whole of her fortune; but the settlement under which he claimed was contested, and a long litigation ensued, which left him bankrupt and an inmate of the Fleet prison. He is said to have been released through the kindness of James II., who, learning that the author of the "Plain Dealer" was lying in the Fleet, settled upon him a pension of £200 and offered to pay his debts. The death of his father at length put him in possession of the family estates, and the remainder of his life was passed in easy circumstances. In 1704 he published a folio volume of "Miscellany Poems," remarkable chiefly for bad rhymes and worse morality, and about the same time contracted an intimacy with Pope, then 16 years of age, whom he asked to correct his verses. The unsparing manner in which this was done so disconcerted the old dramatist, that the intercourse between the parties was soon broken off. Eleven days before his death Wycherly married again, chiefly to annoy and burden the heir-at-law to his estate, his nephew, whom he hated. On his death bed he exhorted his wife "never to marry an old man again." A volume of his works, comprising poems and "moral reflections," was published after his death. The latest edition of his plays is that published by Moxon in one volume, in conjunction with the dramatic works of Congreve, Farquhar, and Vanbrugh, and with biographical notices by Leigh Hunt.

WYCLIFFE, JOHN DE, an English reformer, born probably in a village which bears his name near Richmond, Yorkshire, in 1324, died in Lutterworth, Dec. 31, 1384. The family to which he seems to have belonged were lords of the manor and patrons of the rectory of Wycliffe from the time of the conquest. He became a student at Queen's college, Oxford, about 1340, but soon removed to Merton college, in which Duns Scotus, Occam, and other distinguished scholastics had been educated. He is said to have attained proficiency in the civil, canon, and common law, but devoted himself with the greatest zeal and success to the scholastic philosophy and divinity. The chroniclers most averse to him admit his preëminence in theological knowledge. The earliest publication attributed to him, though on slight evidence, is a tract entitled "The Last Age of the Church," which appeared in 1356, and was first printed under the editorial care of J. H. Todd, D.D. (Dublin, 1840). The "black death" had recently desolated Europe, one fourth of the population, it is estimated, having perished by its ravages. The design of this tract was to prove that the day of judgment was impending, and would not be deferred beyond the current century. The opinion was grounded on the prophecies of the Calabrian monk Joachim (about 1130–1201), and on a mystical calculation from the letters of the Roman alphabet. He first distinguished himself in a controversy with the mendicant orders, which began about 1360. He upheld the authority of the parochial clergy against the friars, and denounced the institution of the Franciscan and Dominican orders as an attempt to do something for the church unauthorized by its divine founder. In 1360 he became master of Baliol college, Oxford, and was preferred to the living of Fillingham, in the diocese of Lincoln. In 1365 he exchanged the mastership of Baliol for the wardenship of Canterbury, which had been founded by Simon de Islip, archbishop of Canterbury, for the reception both of secular scholars and monks. But from the rivalries between the two parties the experiment was not successful, and Islip determined to change the foundation by restricting its advantages to the secular clergy. It was under this new arrangement that Wycliffe, by choice of the archbishop, became warden. The monks protested, the archbishop did not long survive, and his successor pronounced the appointment of Wycliffe void. He in turn protested, but after a litigation of 7 years both the pope and the king decided against him. While this suit was pending, Pope Urban V. demanded payment of the annual tribute promised by King John as an acknowledgment of the pontiff's feudal superiority. Challenged by an anonymous monk, Wycliffe, who was now a royal chaplain, published a paper declaring the papal claim to be baseless on the ground both of reason and Scripture. In 1368 he exchanged the living of Fillingham for that of Ludgershall, which was nearer to Oxford, and in 1372 took the degree of doctor of theology, which, according to the usage of the time, authorized him to deliver lectures as a professor of theology in the university. He immediately availed himself of the privilege, and, as Lewis says, "with very great applause, having such an authority in the schools, that whatever he said was received as an oracle. In these lectures he frequently took notice of the corruptions of the begging friars, which at first he did in a soft and gentle manner, till finding that his detecting their abuses was what was acceptable to his hearers, he proceeded to deal more plainly and openly with them." Two years later he was one of an embassy sent by Edward III. to negotiate at Bruges with the delegates of Gregory XI., chiefly concerning the papal reservation of benefices in England which were held by foreigners, and the revenues of which were transmitted to Rome or Avignon, a matter which had been frequently complained of in the English parliament. During an absence of nearly two years he was presented by the king to the prebend of Aust, in the collegiate church of Westbury, and to the rectory of Lutterworth; but the part which he took in the embassy rendered him increasingly obnoxious to the papal court and to its more devoted partisans in England. In 1377, consequently, letters were sent by the pope, both to Oxford and to Canterbury, to the bishop of London and the king, demanding that inquiry should be forthwith made concerning the doctrines which he was reported to promulgate, and that he should be immediately put in custody until further instructions. Before they arrived he had been summoned on a charge of heresy to appear before the English convocation in St. Paul's, Feb. 19. When he made his appearance, it was with John of Gaunt, duke of Lancaster, on one side, and Lord Percy, earl marshal of England, on the other. Between these noblemen and Courtney, bishop of London, the presiding churchman, a violent altercation at once ensued; the throng of people which had attended broke into tumult; the meeting was dissolved, and the reformer withdrew under the protection of his powerful friends. The populace favored the clergy, and attacked the magnificent palace of John of Gaunt, the Savoy, which was saved by the influence of the bishop of London. The parliament which soon after assembled took up the subject of papal encroachments, and propounded to Wycliffe the question whether a kingdom might not prevent its treasures, needed for its own defence, from being conveyed to a foreign country, even against the command of the pope himself. He drew up a paper in vindication of the right. The papal bull on its arrival was not strictly obeyed; the university treated it with cold respect; but early in 1378, in obedience to a summons of the archbishop, he appeared before a synod of the clergy in Lambeth. The populace were now disposed to take his part, and in alarm for his personal safety surrounded the chapel, and soon forced their way into it. A messenger also arrived prohibiting the synod in the name of the queen mother from proceeding to any conclusions injurious to him. The only result was that he received a statement of the objectionable doctrines attributed to him, with an admonition not to repeat them, to which he gave a written answer. He retired amid popular acclamations, while the delegates sat in judgment on his reply. In this he maintained that the ultimate authority concerning the persons and property of churchmen belonged to the laity, and he denied that censures pronounced by ecclesiastics were valid unless they accorded with the will of God. Both propositions were declared either erroneous or heretical. The circumstance, perhaps, which now saved him from punishment was the schism in the church, by the election of two popes, which weakened the power of the papacy. He resumed his pulpit discourses, academic lectures, and various writings, his opinions becoming more and more adverse to those upheld by the clergy. The most important of his writings was an English version of the whole Bible from the Latin Vulgate, in which he was probably assisted by pupils and learned friends. He made, says Lingard, "a new translation, multiplied the copies with the aid of transcribers, and by his poor priests recommended it to the perusal of their hearers. In their hands it became an engine of wonderful power. Men were flattered with the appeal to their private judgment; the new doctrines insensibly acquired partisans and protectors in the higher classes, who alone were acquainted with the use of letters; a spirit of inquiry was generated; and the seeds were sown of that religious revolution, which, in little more than a century, astonished and convulsed the nations of Europe." Editions of his New Testament were printed by Lewis in 1731, by Baber in 1810, and in Bagster's "English Hexapla" in 1841. The complete translation was first published by the university of Oxford (4 vols., 1850), under the editorial care of the Rev. Josiah Forshall and Sir Frederic Madden. To his influence and to that of his disciples, who under the name of poor priests itinerated over the country and disseminated his opinions by preaching in churchyards, fairs, markets, or elsewhere, was in part attributed the insurrection of Wat Tyler. In 1381 he took his boldest step and gave the greatest offence by lecturing at Oxford against the doctrine of transubstantiation. The chancellor summoned an assembly of 12 doctors, who condemned his conclusions; Courtney, who had been raised to the see of Canterbury, called another synod, which declared 10 opinions that had been publicly preached to be heretical, and enjoined the most vigorous measures for their suppression; the crown, on petition of the lords spiritual in parliament, empowered the sheriffs of counties to arrest all preachers of heresy; but Wycliffe was rarely mentioned in these proceedings, and remained unmolested, though many of his followers were prosecuted. But in 1382 an appeal which he addressed to the king and parliament caused him to be summoned before the convocation of the clergy at Oxford. The duke of Lancaster, to whose unavowed protection he perhaps owed his safety, now recommended to him to recant. He appeared, and gave two confessions or defences, one in Latin and one in English, in which he maintained a real presence while denying transmutation; and the result was that no sentence was pronounced, but a letter was obtained from the king which commanded him to banish himself from the university. The remainder of his life he spent at Lutterworth, where he had long been an exemplary and unwearied pastor, and where he continued to preach constantly, revised his theological lectures for publication, carried on his translation of the Bible, and produced numerous tracts and treatises. Cited to appear before the pope on a charge of heresy, he declared his physical inability to go. He had recovered from one paralytic attack, but, two days before his death, while hearing mass in his church, as the host was about to be elevated, he fell in a fit of palsy, and never spoke again. The council of

Constance condemned all of his writings, and decreed that his body should be exhumed and burned, which sentence was carried into effect. "His austere, exemplary life," says Milman, "has defied even calumny; his vigorous, incessant efforts to reduce the whole clergy to primitive poverty, have provoked no retort as to his own pride, self-interest, indulgence, inconsistent with his earnest severity. His industry, even in those laborious days, was astonishing." —According to the doctrine of Wycliffe, the authority of the crown was supreme over all persons and property in England, to the exclusion not only of the secular but the spiritual jurisdiction of the papal court. He was opposed to the whole framework of the hierarchy as a device of clerical ambition, to episcopacy and endowments, and held that the clergy should be supported by alms, and should require only livelihood and clothing. He retained the ordinance of baptism, but without regarding it as essential to salvation, and the sacrament of the mass, but without the doctrine of transubstantiation. He denied any intrinsic beneficial influence from confirmation, penance, holy orders, or extreme unction, and declared them all fraught with delusion. He believed in the existence of an intermediate state, but held masses for the dead to be a piece of clerical machinery, adjusted with a view to gain. He taught that men are neither the better nor worse for church censures, but that the destiny of each is determined according to his own spiritual condition as a responsible creature. The number of brief tracts which he produced baffles calculation. Two hundred are said to have been burned in Bohemia. Many of them still exist in manuscript.—His life has been written by the Rev. John Lewis (1719), Dr. Robert Vaughan (1828; revised, 1853), and by the Rev. Webb Le Bas (1832).

WYKEHAM, William of. See William of Wykeham.

WYLIE, Andrew, D.D., an American educator, born in Washington co., Penn., April 12, 1789, died in Bloomington, Ind., Nov. 11, 1851. He was graduated at Jefferson college, Penn., in 1810, studied theology with his brother, the Rev. William Wylie, and in 1812 was licensed as a preacher in the Presbyterian church, having in the previous April, when scarcely 23 years of age, been elected president of Jefferson college. Five years later he accepted the presidency of Washington college, a neighboring institution, which, like Jefferson college, depended mainly upon the Presbyterian denomination for support. He at the same time undertook the charge of a congregation about 7 miles distant. In 1829 he was chosen president of the university of Indiana, in Bloomington, and removed to that place. In Dec. 1841, having for some time previous practically withdrawn from the Presbyterian communion, he was ordained a deacon in the Protestant Episcopal church, and in May, 1842, a priest. His publications consist of an "English Grammar" (1822), "Sectarianism is Heresy" (1840), and numerous occasional addresses, of which the best known is that delivered before the Philomathean society of Wabash college in July, 1838, entitled "The Propriety of retaining the Greek and Roman Classics in their Place, as a part of Study necessary in the Course of a Liberal education." At the time of his death he had completed for publication a work on rhetoric, and one entitled "Advice to Young Men."

WYMAN, Jeffries, an American comparative anatomist, born in Chelmsford, Mass., Aug. 11, 1814. He was graduated at Harvard college in 1833, and at the Massachusetts medical college in 1837, shortly after which he visited Europe and remained there two years, studying medicine in the hospitals of Paris, and natural history in the *jardin des plantes*. In 1843 he accepted the chair of anatomy and physiology in the medical department of Hampden Sidney college, Richmond, Va., where he continued until 1847, when he resigned on his appointment as Hersey professor of anatomy in Harvard college, and professor of comparative anatomy in the Lawrence scientific school, which offices he still retains. He has delivered two courses of lectures before the Lowell institute in Boston, one of which was published under the title of "Twelve Lectures on Comparative Physiology." His other published writings consist of various articles on comparative anatomy, physiology, and embryology, in the "American Journal of Science," the "Smithsonian Contributions to Knowledge," the "Boston Journal of Natural History," and the "Proceedings of the Boston Society of Natural History," of which association he has been president since 1856.

WYNANTS, Johannes, a Dutch painter, born in Haarlem about 1600, died probably subsequent to 1673. Very little is known of his life except that he was master of Adrian Vandevelde, Wouverman, and other eminent painters, and that he was naturally indolent and given to pleasure. His works are consequently few, but are highly valued for their technical merits. They consist of landscapes of small size, the figures and cattle in which were executed by other hands.

WYNDHAM, Sir William, a British statesman, born at Orchard-Wyndham, Somersetshire, in 1687, died at Wells, July 17, 1740. He was educated at Eton and at Christchurch college, Oxford, travelled on the continent, married a daughter of the duke of Somerset, and entered the house of commons for his native county. He identified himself with the tories, became secretary at war in the Oxford and Bolingbroke ministry, June 11, 1711, and in Aug. 1713, was transferred to the office of chancellor of the exchequer. In the quarrel between Oxford and Bolingbroke he took the part of the latter, was suspected of treasonable relations with the pretender, and lost his office on the death of Queen Anne. Returned to the first parliament summoned by George I., he protested with such vehemence against the royal proclamation by which the preceding parliament had been dissolved, that the house was disposed to punish him by imprisonment, but finally, through the influence of Sir Robert Walpole, determined that he should merely be reprimanded by the speaker. On the outbreak of the rebellion in Scotland under the earl of Mar in 1715, an order for Wyndham's confinement was issued, and he was arrested at his house in Somersetshire, but escaped from the messenger while out of his sight on pretence of making preparations to accompany him to London. A reward of £1,000 was offered for his apprehension, and after lurking for some time disguised as a clergyman, he surrendered himself and was committed to the tower. Released without a trial, he remained until his death a leader of the parliamentary opposition to the ministry of Sir Robert Walpole. A second time, in 1739, he insulted the majority of the house, and again owed his escape from imprisonment to the forbearance of Walpole. He was a very graceful, clear, forcible, and spirited orator.—His son, SIR CHARLES WYNDHAM, who inherited from the duke of Somerset the title of earl of Egremont, was chosen by Fox and Waldegrave to be secretary of state after the dismissal of Pitt by George II. in 1757; but the return of Pitt to office frustrated the arrangement. Egremont however received the place on Pitt's final resignation on Oct. 5, 1761. He died in 1763.

WYNKIN DE WORDE. See WORDE.

WYOMING. I. A W. co. of N. Y., bounded S. E. by the Genesee river, and drained by affluents of that stream, and Tonawanda, Buffalo, and other creeks; area, 590 sq. m.; pop. in 1860, 31,967. The surface is generally broken and hilly, and the soil fertile and well adapted to the raising of cattle and sheep, which is largely pursued. The productions in 1855 were 419,995 bushels of wheat, 234,006 of Indian corn, 496,837 of oats, 203,932 of potatoes, 323,290 of apples, 1,333,948 lbs. of butter, 823,105 of cheese, 209,046 of maple sugar, 347,973 of wool, and 58,421 tons of hay. There were 30 grist mills, 77 saw mills, 10 shingle factories, 6 iron furnaces, 16 tanneries, 74 churches, 4 newspaper offices, and 11,872 pupils in public schools. The county is intersected by the Buffalo, New York, and Erie railroad. Capital, Warsaw. II. A N. E. co. of Penn., intersected by the North branch of the Susquehanna river, and drained by Tunkhannock, Mahoopeny, and other large creeks; area, 345 sq. m.; pop. in 1860, 12,540. The surface is generally hilly or mountainous, Mahoopeny, Tunkhannock, Knob, and Bowman's mountains traversing a portion of the county. The soil is fertile. The productions in 1850 were 62,734 bushels of wheat, 116,349 of Indian corn, 88,632 of oats, 211,215 lbs. of butter, and 9,788 tons of hay. There were 12 grist mills, 42 saw mills, 8 churches, 2 newspaper offices, and 2,440 pupils attending public schools. Timber, coal, and iron are very abundant. The county is intersected by the North branch canal, and by the Delaware, Lackawanna, and western railroad. Capital, Tunkhannock. III. A W. co. of Va., drained by the branches of Sandy and Guyandotte rivers; area, 880 sq. m.; pop. in 1860, 2,865, of whom 64 were slaves. The surface is mountainous, and the greater part covered with forests of valuable timber. Great Flat-Top mountain extends along the S. E. border. The soil is moderately fertile. The productions in 1850 were 47,506 bushels of Indian corn, 8,765 of oats, 17,197 lbs. of butter, and 2,441 of tobacco. There were 2 churches. Iron ore and bituminous coal are found. The value of real estate in 1856 was $380,196, an increase of 198 per cent. since 1850. Capital, Wyoming Court House.

WYOMING VALLEY (a corruption of the Indian *Maughwauwame*, large plains), a beautiful and fertile tract on the Susquehanna river in Luzerne co., Penn., which was the scene of several tragic conflicts in the early border and revolutionary wars. It lies N. E. and S. W., having an average breadth of 3 m. and a length of 21 m., and is enclosed by ranges of rugged mountains about 1,000 feet in height. The valley was purchased from the Delaware Indians in 1753 by an association formed in Connecticut and called the Susquehanna company; but owing to the disturbances caused by the 7 years' war, no permanent settlement was attempted till 1763. The first settlers were attacked and dispersed by the Indians, and for several years the valley remained uninhabited by white men. In 1769 a body of 40 Connecticut pioneers was sent thither by the Susquehanna company, but found themselves forestalled by some Pennsylvanians, the proprietaries of Pennsylvania having in the preceding year purchased the territory from the Six Nations, and for the next 6 years Wyoming was the scene of numerous conflicts between settlers from the two colonies, both of which under their charters, as well as by purchase, claimed possession of the soil. The Connecticut people, however, so far succeeded in maintaining their hold in the valley, that at the commencement of the revolutionary war they had established there a flourishing town called Westmoreland, containing more than 2,000 inhabitants. The isolated position of the colony in 1776 prompted the settlers, in view of the danger of attacks by hostile Indians, to bury their feuds and prepare for common defence. The two companies authorized by congress to be raised for this purpose were, however, ordered to join Gen. Washington, and in June, 1778, a 3d company, intended for a local garrison, was scarcely organized and imperfectly armed. On the last day of that month a body of 400 British provincials with about 700 Indians, principally of the Seneca tribe of the Six Nations, under the command of Col. John Butler, entered the head of the valley, where a fort held by some disaffected persons surrendered at once. The remaining inhabitants, who had taken refuge in

Forty fort (so called from the 40 Connecticut pioneers), were then called upon to surrender. A consultation ensued, and the available military force, comprising about 300 men of all ages under command of Col. Zebulon Butler, a continental officer, having decided to give battle to the enemy, were on July 3, after a desperate struggle, defeated and driven back to the fort, with a loss of more than two thirds of their number, who were massacred by the Indians and tories with every circumstance of savage cruelty, not even the prisoners being spared. A number of the latter were put to death on the evening of the battle, and Queen Esther, a half-breed Indian woman, to avenge the death of her son, tomahawked 14 with her own hands near a rock which still bears her name. On the 5th the fort surrendered; but notwithstanding the promises of the British commander, the Indians showed so little respect for property or life, that in the latter part of July the surviving inhabitants of the valley, mostly women and children, including those of Wilkesbarre on the east side of the river, fled through the wilderness (many perishing by hunger and exhaustion on the way) to the less exposed settlement of Stroudsburg; and for a while Wyoming was again deserted of its people. A few returned in the succeeding year, but until the close of the revolution, in spite of the severe chastisement the Six Nations received from Gen. Sullivan, the settlement remained in continual alarm, and straggling settlers were from time to time picked off by prowling Indians. The whole number who perished during the war by violent deaths probably exceeded 300. The barbarities perpetrated by the Indians and tories, shocking as they were, were greatly exaggerated by contemporary and succeeding narrators, not improbably for the purpose of inflaming the colonists against the British, and of bringing into disrepute the practice of employing the Indians as allies. But although recent investigations have considerably mitigated the horror of the story, the name of Wyoming will always be popularly associated with acts of ferocious cruelty, remarkable even for the troubled times in which they were supposed to have been perpetrated. This is in no slight degree owing to the wide popularity obtained by Campbell's poem, "Gertrude of Wyoming," founded upon the earlier accounts of the massacre, and of which the romantic imagery and characters, and many of the incidents, it is almost needless to add, were invented by the poet himself. Brant, the Mohawk chief, whom he stigmatizes as one of the principal actors in the tragedy, it is now known, took no part in Butler's invasion.—The troubles of Wyoming by no means ended with the war. The vexed question of title to the territory, which had remained in abeyance between Connecticut and Pennsylvania. was revived in 1782, and a commission, appointed by congress to decide upon the controversy, reported in favor of Pennsylvania. But upon an attempt by the authorities of that state to eject the Connecticut settlers from their dearly bought homes, the latter again took arms, and for several years the conflicts of the early colonists were renewed. The legislative assembly of Pennsylvania finally ordered the settlers to be restored to their possessions, and subsequent to 1788 no further scenes of violence took place, although it was not until after the commencement of the present century that all the land claims were quieted by law. Wyoming is now the centre of a rich agricultural and mining region, embracing portions of the towns of Wilkesbarre, Kingston, and Pittstown; and the monument erected in 1843 on the site of the battle field of July 3 alone reminds the spectator of the tragic incidents of which the valley was once the scene.—See "History of Wyoming," by Charles Miner (Philadelphia, 1845), and "Wyoming," by George Peck, D.D. (New York, 1858).

WYON, William, an English engraver and designer of coins and medals, born in Birmingham in 1795, died in Brighton, Oct. 29, 1851. He was instructed in his art by his father, a die sinker of some reputation in Birmingham. Having won several prizes for medals offered by the society of arts, he repaired in 1816 to London, and was appointed second engraver at the mint, a post which he filled until the close of his life. In 1832 he was elected an associate of the royal academy, and in 1838 an academician, being the first of his department who had ever obtained these honors. His works, comprising coins, pattern pieces of coins not used, medals, and seals, are numerous. His coins cover a period of nearly 30 years, including the latter part of the reign of George IV., the reign of William IV., and the first 13 years of the reign of Victoria. Far more numerous than these are his medals, which may be embraced under 4 different heads, war, scientific, artistic, and testimonial medals, executed from his own or from Flaxman's designs, and in the highest style of the art. In the latter part of his life he received commissions for coins or medals from foreign countries.

WYSOCKI, Jozef, a Polish general, born in Podolia in 1809. He studied at Krzemieniec, in Volhynia, entered the Polish army in 1828, serving in a regiment of artillery, and fought bravely in the war of the revolution of 1830–'31 (begun under the lead of another young soldier of his name, the ensign Peter Wysocki, who died a captive in Siberia in 1837). After the fall of Warsaw, he went to France, where he attached himself to the democratic part of the Polish emigration, and went through a public course, theoretical as well as practical, of military studies, after the termination of which he both lectured and wrote, in Polish, on his favorite science, his principal publication being *Sztuka wojenna* ("The Art of War," 2 vols., Paris, 1842). He was selected by his party to become one of the military leaders in the insurrection of 1846 in Galicia, which however failed at the very outbreak. In the spring of 1848 he repaired to Cracow, and in the autumn of that year went to Hungary, and offered his services to Kossuth. The offer being accepted, he at the head of a small band of Polish volunteers first distinguished himself in the defence of the town of Arad, and in March, 1849, contributed much to the decisive victory of Szolnok, won by Damjanics. He subsequently took a conspicuous part in the victorious April campaign under Görgey, at the close of which he was promoted, and organized the Polish legion. Having received soon afterward the command of the forces in northern Hungary, he retired before the overwhelming invading army under Paskevitch, joined Perczel near Czegléd, and with him marched to the lower Theiss. After the battle of Temesvár, in which his legion fought with its wonted bravery, he covered the retreat of the Hungarian leaders to the Servian frontier, and shared in their Turkish exile, returning to Europe in 1852. After the outbreak of the eastern war in 1853, he went from Paris to Constantinople, in the interest of the Polish emigration, but political considerations baffled the success of his mission. He has since resided in France.

WYTHE, a S. W. co. of Va., intersected by the Great Kanawha (here called the New) river; area, 700 sq. m.; pop. in 1860, 12,305, of whom 2,162 were slaves. It is mostly an elevated plateau, lying between Iron mountain on the S. and Walker's mountain on the N. W., and the soil is generally fertile. The productions in 1850 were 72,738 bushels of wheat, 280,652 of Indian corn, 155,207 of oats, 213,010 lbs. of butter, and 43,766 of wool. There were 3 iron furnaces, 2 lead furnaces, 30 churches, and 200 pupils attending public schools. Iron ore, lead, bituminous coal, limestone, and gypsum are very abundant, and there are traces of silver found in the lead mines. The county is intersected by the Tennessee and Virginia railroad. The value of real estate in 1856 was $3,308,095, an increase of 46 per cent. since 1850. Capital, Wytheville.

WYTHE, George, an American jurist, and a signer of the declaration of independence, born in Elizabeth City co., Va., in 1726, died in Richmond, June 8, 1806. He was early left an orphan with a fortune, commenced the study of law at the age of 30, was admitted to the bar, and soon became a successful practitioner. Elected to the Virginia house of burgesses, he was appointed in 1764 on the committee to prepare a petition to the king, a memorial to the house of lords, and a remonstrance to the house of commons against the proposed stamp act. The remonstrance was written by Wythe. He was also a member of the house of burgesses of 1768 and of 1769, and was elected to the continental congress in Aug. 1775; and in 1776 he was appointed one of the committee to revise the laws of the state. In 1777 he was chosen a judge of the high court of chancery, and subsequently sole chancellor, and was professor of law in William and Mary college. In the latter part of his life he emancipated his slaves and furnished them means of subsistence. He died suddenly from the effects of poison accidentally taken with his food.

WYTTENBACH, Daniel, a Dutch philologist, born in Bern, Switzerland, in 1746, died at Oegstgeest, Holland, Jan. 17, 1820. He studied philology at the universities of Marburg, Göttingen, and Leyden, and in his 25th year was appointed professor of Greek and philosophy in the college of the Arminians at Amsterdam, and in 1771 in the Athenæum of that city. In 1799 he was appointed professor of eloquence at Leyden. His various essays have been published collectively under the title of *Opuscula Varii Argumenti, Oratoria, Historica, Critica* (2 vols. 8vo., Leyden). From 1779 to 1808 he edited the *Bibliotheca Critica*, and he also published editions of several classical authors.

X

X, the 24th letter of the English alphabet, the 14th of the Greek, the 21st of the Latin, and the 23d of the French and German. It represents in English, and generally in French also, the combined sounds of *cs* as in the word *texture*, and of *gs* as in the word *example*, except at the beginning of words, where it has the sound of *z*. Its form is apparently borrowed from that of the Greek χ, while its sound is that of the Greek ξ; but on this subject a great deal of subtle discussion has been expended without settling the question. In Italian it is not used, *s* and *c* being substituted for it in that language, as *esatto*, exact, *eccellente*, excellent. In Spanish it has at the end of syllables the same value as in English; at their beginning it is, like the Spanish *j*, equivalent to the English *h*, that is to say, it is a simple aspirate. In Portuguese it represents several sounds, but most frequently that of the English *sh*, as in the word *sham*. In Russian the X represents the sound, as it retains the character, of the Greek χ. As a Latin numeral, X stands for 10; the Greek ξ stood for 60, and χ for 600.

XALAPA. See Jalapa.

XALISCO. See Jalisco.

XANTIPPE. See Socrates.

XAVIER, Saint Francis (Francisco de Xavier), "the apostle of the Indies," and one of the first members of the society of Jesus, born at the castle of Xavier, near Obanos, in Navarre, April 7, 1506, died in the island of Sancian, near Macao, China, Dec. 2, 1552. He belonged to a noble family, his father, Don Juan de Jasso, being councillor of state to John III. of Navarre, and his mother heiress to the two illustrious houses of Azpilcueta and Xavier. Francis was the youngest of a large family of children. At the age of 18 he entered the college of St. Barbara in Paris, and at 24 was graduated master in philosophy and licensed to lecture upon Aristotle. He taught with applause at the college of Beauvais, and obtained the title of doctor in the Sorbonne. About this time he became acquainted with Ignatius Loyola, who persuaded him, with no little difficulty, to join the society which he was then forming for missionary operations in Palestine. This was the association which, diverted from its original object by unforeseen causes, became the order of Jesuits. On Aug. 15, 1534, Loyola, Xavier, and 5 others took their vows in the chapel of Montmartre near Paris, but for some time they continued to pursue their ordinary avocations, following in private a rule of life which Loyola had drawn up for them. In 1537 they met their leader in Venice, and thence went to Rome to obtain the pope's blessing on their undertaking. The sultan however was now at war with the emperor, and their projected journey to Palestine was therefore impracticable. Xavier, having been ordained priest, went to Bologna, preached, visited the hospitals and prisons, and displayed so much of the zeal and spirit of an apostle, that when the Portuguese government requested Loyola to send some of his companions as missionaries to their settlements in the Indies, he was one of the two selected, and embarked from Lisbon in April, 1541, about 6 months after the formal establishment of his order. During the voyage scurvy raged fearfully among the crew, and Xavier employed himself in cleaning their sores and washing their soiled clothes. He touched at Mozambique, Melinda, and Socotra, preaching with very remarkable effect wherever he landed, and in May, 1542, reached Goa, the capital of the Portuguese Indies. With a bell in his hand he went through the streets, calling upon the Christian inhabitants to send their children and slaves to be instructed in the faith. In a short time he is said to have effected almost a complete reformation of the city. From Goa he went to the coast of Comorin and the island of Ceylon, and afterward, making Malacca his head-quarters, visited many other parts of the East, baptizing vast numbers of the natives, reviving the dead faith of the Portuguese settlers, and leaving wherever he went flourishing congregations under the care of his disciples. Other missionaries after a while arrived from Europe to help him, and in 1549 he crossed over to Japan. There he was received with great kindness by the civil authorities, and permitted freely to preach the gospel. The intrigues and violence of the Japanese priests were of little avail against the intrepid Christian. He held a public disputation with the bonzes, the effect of which was to enroll many of the educated classes among his converts; and when he returned to Goa in 1551, he left three of the great princes of the empire Christians, beside having baptized immense numbers of the common people, and thoroughly prepared the field for the labor of the missionaries who came after him. His intention was next to penetrate into China, but he had barely arrived in sight of the empire when he was attacked by a fever which rapidly carried him off. His remains were taken to Goa and deposited in a chapel near the city. During his 10 years' apostleship it has been remarked that he planted the faith in 52 different kingdoms, preached the gospel through 9,000 miles of territory, and baptized more than 1,000,000 persons. Many miracles were ascribed to Xavier, and he was beatified by Pope Paul V. in 1619, and canonized by Gregory XV. March 12, 1622. His literary works comprise letters, a catechism, and several minor writings, all of which have been published. His life was written in Latin by Tursellini (Rome, 1594) and Bartoli (Lyons, 1666), and in French by Bouhours (Paris, 1682; translated into English by John Dryden, London, 1688).

XENIA, in ancient times, the presents which the Greeks and Romans were accustomed to give their guests. The Roman poet Martial used this word as the title of the 13th book of his epigrams, because in great part it treated of such objects as were presented to guests as gifts. A special interest was given to the name in modern times by the publication by Schiller, in the *Musenalmanach* of 1797, of more than 400 distichs, entitled *Xenien*, which referred chiefly to matters connected with the existing state of literature. They produced a great sensation throughout Germany, not so much in most cases from the wit and sarcasm manifested, as from the bitter manner in which they attacked living authors. They called forth numerous, and in general very inferior replies. They are now known to be the joint production of Goethe and Schiller, but it is impossible to tell which ones were written by each.

XENIA, a township and village, and the capital of Greene co., Ohio, on the Little Miami, 65 m. N. N. E. from Cincinnati, and 61 W. S. W. from Columbus; pop. in 1860, 4,658. It derives considerable importance from the fact of being the point of junction of the Little Miami, the Dayton, Xenia, and Belpre, and the Sandusky, Dayton, and Cincinnati railroads. The village contains several churches, a bank, and 2 newspaper offices.

XENOCRATES, a Greek philosopher, born in Chalcedon in 396 B. C., died in 314. He attached himself first to Æschines, and afterward, while still young, to Plato, whom he accompanied to Syracuse. After the death of Plato he was repeatedly sent on embassies to Philip of Macedon, and at a later time to Antipater. In the second year of the 10th Olympiad he took the chair in the academy as the successor of Speusippus. So eminent was his reputation for integrity, that when called upon to give evidence where an oath was usually required, the judges agreed that his simple asseveration should be taken, as a public testimony to his merit. He taught that the good is that which should be striven after for itself, and that the bad is the opposite of this; that while intermediate things, such as health, beauty, fame, and fortune, are not valuable in themselves, they are not absolutely worthless; but that the value of every thing beside virtue is conditional, and that happiness is the possession of personal virtue and the capabilities adapted to it.

XENOPHANES, a Greek philosopher and poet, born in Colophon in Ionia, flourished in the latter part of the 6th century B. C. He is regarded as the founder of the Eleatic school. He quitted his native town as an exile, and probably lived for some time in Elea in Magna Græcia. He strongly combated the religious theories of Hesiod and Homer, contending that God is one. Although a preceptor in the Pythagorean school, he maintained that, while God is a being distinct from the visible universe, self-existing and all-powerful, yet all things are God. Various attempts have been made to defend him from the charge of pantheism, and Cousin has written elaborately on this subject. The existing fragments of his writings, comprising various elegies and parts of a didactic poem "On Nature," were published by Karsten (Brussels, 1830).

XENOPHON, an Athenian general and author, born probably about 443 B. C., died about 355. He was the son of Gryllus, and a native of the demus of Erchea. Nothing is known of his early life save that he was present at the battle of Delium in 424, on which occasion he is said to have been wounded, and after falling from his horse to have been carried from the field by his friend and teacher Socrates. In 401 he went to Sardis, on the invitation of his friend Proxenus, who was on intimate terms with the younger Cyrus, and promised to introduce him to the Persian prince. He joined the expedition of Cyrus, but without any special office in the army. The object of the prince was unknown to the Greeks in the army, who were however induced by the promise of higher pay to adhere to their commander after his intention of dethroning his brother Artaxerxes II., the reigning king of Persia, was disclosed. Cyrus lost his life at the battle of Cunaxa, and the Greeks then began that return to Europe which has become famous under the name of the retreat of the 10,000. Clearchus and other Greek leaders having been treacherously massacred by the satrap Tissaphernes, Xenophon, who had acted hitherto as a volunteer, assembled the officers, and pointed out to them the only practicable course to be pursued. His confidence, his practised talent, and his rhetorical powers enabled him to influence the soldiers. He was elected one of the 5 generals, and appointed to the command of the rear guard, and by degrees came to be regarded as the controlling head of the army. He conducted the troops through many trials and perils across Mesopotamia and Armenia to Trapezus, on the Euxine, and thence to Europe, and was thus the first to demonstrate the utter inability of a Persian force, however large, to contend with a determined body of disciplined Greeks. After handing over his troops to the Spartan general Thimbron, he seems to have returned to Athens. Three years afterward he was serving in Asia under Agesilaus, the Lacedæmonian king. In the meanwhile war sprang up anew between Sparta and Athens, and Xenophon, accompanying his leader back to Europe, fought against his countrymen in the battle of Coronea in 394. Athens now passed against him a sentence of banishment. The Lacedæmonians rewarded him for his treason by allowing him land and a house at Scillus, a village of Triphyllia in the Peloponnesus, to which he subsequently added by purchasing some pastures and hunting grounds. After the battle of Leuctra in 371 he was expelled by the Eleans from his residence, and is said to have then taken up his abode in Corinth. Not long afterward peace between Athens and Sparta was followed by a close alliance. The sentence of exile passed against Xenophon was revoked, and the last years of his life were probably spent in Athens. His two sons, Gryllus and Diodorus, fought in the cavalry engagement preceding the battle of Mantinea, and the former was slain.—Though Xenophon was largely engaged in military operations, it is as an author that he is chiefly remembered. Of his historical works, the best is the *Anabasis*, descriptive of the advance into Persia and retreat of the 10,000 Greeks. The work is clear and simple in style, and valuable to us for the curious information it gives of the countries through which the army marched, as it was valuable to the Greeks of his time for its exposition of the inherent weakness of the Persian empire. The *Hellenica*, in 7 books, is a history of Grecian affairs from the time at which Thucydides ends his narrative to the battle of Mantinea in 362, and therefore includes a period of about 48 years. It is generally a dry and unentertaining account, yet has some excellent and important details; but throughout it is disfigured by his partiality for the Spartan general Agesilaus, by his hatred of the country which bore him and of her democratic institutions, and his undisguised admiration for the oligarchical spirit which prevailed in Lacedæmon. The *Cyropædia* is a political romance, in which the author gives his idea of the state, taking as a basis the history of Cyrus the Great. Though sometimes quoted as such, it has no claim to be considered a history, as the statements are often entirely unworthy of credit. It is unmistakably throughout the work of a dilettante man of letters, who prefers the material benefits and ease of despotism to the inconveniences sometimes arising under a democratic form of government. The *Agesilaus*, a panegyric on his friend and commander, the king of Sparta, is similar to works of its class in general. The *Hipparchicus* is a treatise on the duties of a cavalry officer; the *Hippike*, on the horse itself; and the *Cynegeticus*, on the dog and the chase, to which recreation Xenophon was much addicted. The two treatises on the republics of Sparta and of Athens manifest still more plainly than his other works his prejudices against a democratic form of government. The treatise on the revenues of Athens is a short tract, which is said to have been written by him after his return to his native city as a peace offering to his countrymen. The *Hiero* is an imaginary dialogue between the king of Syracuse of that name and the poet Simonides on the advantages and disadvantages of the possession of absolute power. The other works of Xenophon are records of the acts and conversations of Socrates. Of these, by far the best known is the *Memorabilia*, in which the disciple undertakes to defend his master against the charge of irreligion and of corrupting the youth of Athens. It consists of a series of conversations, all of which turn upon the duties of active life, and in no other of his works does Xenophon show more clearly that taste for practical pursuits and matters which was the leading element in his character. This work is chiefly valuable as giving a view of Socrates which the higher genius of Plato did not care to record. The "Apology" for Socrates is a short treatise defending the conduct of his master after he had been pronounced guilty, and giving the reasons why he preferred death to life. The *Symposium* or "Banquet" is the narration of a conversation at a feast given by Callias, in which the guests, among whom is Socrates, discuss the nature of love and friendship. The *Œconomicus* is a dialogue carried on between Socrates and Critobulus in regard to agriculture and the management of household affairs.—In his private life Xenophon seems to have been a humane, though an intensely selfish man. He was a devout believer in all the superstitious ideas of his times. There is no nursery tale too absurd for him to credit, and no dream or prophecy which is not an important omen in his eyes. "In truth, Xenophon," says Macaulay, "though his taste was elegant, his disposition amiable, and his intercourse with the world extensive, had, we suspect, rather a weak head. Such was evidently the opinion of that extraordinary man to whom he early attached himself, and for whose memory he entertained an idolatrous veneration. He came in only for the milk with which Socrates nourished his babes in philosophy. A few saws of morality, and a few of the simplest doctrines of natural religion, were enough for the good young man. The strong meat, the bold speculations on physical and metaphysical science, were reserved for auditors of a different description."—There are several editions of the collected works of Xenophon, the best being those of Weiske (6 vols. 8vo., Leipsic, 1798–1804) and J. G. Stephens (6 vols. 8vo., Leipsic, 1791–1815). There have been numerous translations of the separate works, the latest edited by J. Watson, in Bohn's "Classical Library."

XENOPHON, a Greek romance writer, a native of Ephesus, who is generally thought to have flourished about the age of the Antonines, although sometimes placed earlier. He is the author of a romance entitled *Ephesiaca*, or "The Loves of Anthia and Abrocomas," which has been translated into English by Rooke (London, 1727).

XERES, Francisco de, a Spanish historian, who accompanied Pizarro in his conquest of Peru as secretary. After the country was subdued he wrote, at the command of his master, a detailed account of the expedition for the benefit of Charles V. The work was published at Salamanca in 1547, under the title of *Verdadera relacion de la conquista del Piru y de la provincia del Cuzco llamada la Nueva Castilla*, &c. It was translated into Italian, and may be found in Ramusio's and Barcia's collections. It is sometimes also appended to Oviedo's "Natural History of the Indies."

XERES (or Jerez) DE LA FRONTERA, a city of Spain, in the province of Cadiz, situated about 2 m. from the right bank of the Guadalete river, and 7 m. from the ocean, upon the route from Cadiz to Seville; pop. in 1850, 33,718. It is an old Moorish city, with narrow, ill paved, and filthy streets. The old Moorish *alcazar* or castle, though now a ruin, is well preserved. There are numerous churches, the collegiate, and those of St. Jago and St. Miguel, being the most noteworthy. The city has a college of some reputation, several schools, and 4 hospitals. Its principal manufactures are woollen stuffs, Spanish morocco, and soap. It is specially noticeable, however, as the principal seat of the production of sherry wine, the name of which is a corruption of Xeres. The amount produced in the district annually is about 1,760,000 gallons of all grades. The best quality, called *vino seco fino*, *oleroso y generoso*, is worth in Xeres about 50 cts. a bottle. Pure Xeres wine 10 or 12 years old sells there at from $20 to $30 a gallon. All the sherry wine produced in the district is delivered at the little port of Santa Maria on the Guadalete, 2 m. distant. Xeres also exports about 28,000 bushels of grain annually. One of the most interesting curiosities of the town is the *bodegas* or wine vaults, in which the wine is stored for fermentation and ripening.—The Moors here defeated Roderic the Goth in 714, and held the town till 1264, when it was wrested from them by Alfonso the Wise.

XERXES, a king of Persia, who reigned from 485 to 465 B. C. He was the son of

Darius Hystaspes and Atossa. His first undertaking on coming to the throne was to suppress a revolt of the Egyptians, which with the vast force at his command he soon accomplished. Four years were now spent in collecting for the invasion of Greece an army as vast and munitions of war as various as the Persian empire, then at its highest development both in point of extent and resources, could furnish. In the autumn of 481 this vast body of men assembled at or near Sardis, and a fleet of 1,207 war vessels was collected in the Hellespont or on the coast of Asia Minor. Across the Hellespont, moreover, he caused a bridge of boats to be thrown, stretching from Abydos on the Asiatic side to the shore between Sestos and Madytus on the European. After this work had been completed, a great storm arose and broke it in pieces. Upon hearing of this calamity, Xerxes commanded a pair of fetters to be thrown into the stream, and the water to be scourged with 300 lashes, his servants during the operation making use of the following terms: "Thou bitter water, thy lord lays on thee this punishment because thou hast wronged him without a cause, having suffered no evil at his hands. Verily, King Xerxes will cross thee whether thou wilt or no. Well dost thou deserve that no man should honor thee with sacrifice; for thou art of a truth a treacherous and unsavory river." Two new bridges were now thrown across the strait. A canal, wide enough for two triremes to pass through abreast, had been cut, the Greek historians relate, through the isthmus which separated Mount Athos from the mainland. In the mean time the king had sent his heralds into Greece, commanding all the cities excepting Athens and Sparta to send him earth and water in sign of submission, and to prepare for feasting him as he advanced. Early in 480 his army began its march. Seven days and nights were spent in crossing the Hellespont. At Doriscus, in Thrace, Xerxes held a review of the whole army, and according to the statement of Herodotus it amounted to 1,700,000 foot and 80,000 horse, with Libyan war chariots and Arabian camels, and in addition, upon the fleet of 1,207 ships of war and 3,000 smaller vessels and transports, was a force which swelled the number to 2,317,000. The statement is doubtless exaggerated, though the army collected by Xerxes was probably the greatest ever assembled at any time in the history of the world. The vast horde traversed Thrace and Macedonia without opposition, and entered Greece through the mountain passes over the range of Olympus. All northern Greece was abandoned at the approach of his army, and the first resistance he met was at the defile of Thermopylæ. In the mean time a terrible storm arose, which destroyed 400 ships of war, at the lowest accounts, and a vast number of transports and smaller vessels. The naval battles of Artemisium and Salamis followed, and Xerxes, thoroughly dispirited by their result, was easily persuaded to leave the conquest of Greece to Mardonius and 300,000 troops, while he himself returned to Asia. After 45 days' march he reached the Hellespont, and reëntered Sardis, defeated and humbled. In that city he remained during the following summer (479), which witnessed the battles of Platæa and Mycale, and the utter overthrow of all the Persian power in Greece; and in 478 their last possession in Europe was lost with the capture of Sestos on the Hellespont. Little is known of the personal history of Xerxes after this time. In 465 he was murdered by Artabanus, one of the highest officers of the court, and the eunuch Spamitres or Mithridates, and was succeeded by his son Artaxerxes. Herodotus says that for beauty and stature none in the vast host he led against Greece could be compared with Xerxes; but he also represents him as exceedingly cowardly and cruel. He is believed by many critics to be the Ahasuerus of the book of Esther.

XIMENES (or Ximenez) DE CISNEROS, Francisco, cardinal, a Spanish statesman and prelate, born in Torrelaguna, Old Castile, in 1436, died in Roa, near Valladolid, Nov. 8, 1517. Being destined for the church, he studied grammar at Alcala and civil and canon law at the university of Salamanca, where in 1456 he received a bachelor's degree in each science. Three years later he repaired to Rome, as offering a wider field for ecclesiastical preferment than Spain, and by his diligence and intelligence made so favorable an impression upon influential persons in that city, that he obtained a papal bull preferring him to the first benefice of a specified value which should become vacant in the see of Toledo. By virtue of this grant, he in 1473 took possession of the living made vacant by the death of the archpriest of Uzeda. But the archbishop of Toledo, incensed at what he considered a violation of his privileges by the papal court, and finding Ximenes indisposed to yield his pretensions, imprisoned him in the fortress of Santorcaz, where he remained more than 6 years. Released in 1480 and placed in undisturbed possession of his benefice, he took an early opportunity to exchange it for a chaplainship in the diocese of Siguenza, where he devoted himself with great ardor to theological studies, and made himself master of the Hebrew and Chaldee languages. He also discharged with signal ability the duties of vicar to Mendoza, bishop of Siguenza. In the midst of this career he conceived a distaste for secular concerns, and determined to retire to some religious establishment, where his naturally austere and contemplative disposition might find freer scope for religious meditations. Accordingly, in 1482 he resigned his various employments and benefices, and, regardless alike of his own advancement and the remonstrances of his friends, entered the Franciscan convent of San Juan de los Reyes in Toledo, which was under the control of the Observants, as those members of the order were called who followed with strictness the rules of their founder. His novitiate was distinguished by a self-mortification so ingenious and rigid as to raise his reputation for sanctity to the highest pitch; and upon being formally received into the order (upon which occasion he assumed the name of Francisco in lieu of his baptismal name of Gonzalo), he found his confessional thronged by multitudes of penitents, who absorbed much of the time he was desirous of giving to his private devotions. He was consequently permitted to transfer his abode to the secluded mountain convent of Our Lady of Castañar, where, in a little cell built with his own hands, "he passed his days and nights," says Prescott, "in prayer, and in meditations on the sacred volume, sustaining life, like the ancient anchorets, on the green herbs and running waters." From this solitary but thoroughly congenial retreat he was after 3 years removed to the convent of Salzeda, of which he was soon appointed the superior. In 1492 the office of confessor to Isabella the Catholic became vacant, and Mendoza, now grand cardinal of Spain, fixed upon Ximenes, of whom he had never lost sight, and whose persistent adherence to a monastic life he had never countenanced, to take charge of the spiritual welfare of the queen. He accepted the office with some unwillingness, as likely to interfere with the strict discharge of his religious duties, and on the condition that he should be allowed to conform to the vows of his order, and to retain his monastic habits and residence, when not required at court. His care-worn and emaciated face and coarse friar's dress made a marked impression upon the courtiers, unaccustomed to such a spectacle within the palace walls; and thenceforth the queen's confessor became a personage known and revered throughout Spain. In 1494 he was appointed provincial of his order in Castile, and in his official journeys invariably travelled on foot, subsisting on the alms of the charitable. In the succeeding year he was nominated by the queen archbishop of Toledo and primate of Spain, a dignity then reckoned the most considerable not merely in Spain, but probably in Christendom, after the papacy. Upon reading the papal bull confirming the nomination, he abruptly left the presence of the queen, exclaiming: "There is some mistake in this; it cannot be intended for me," and set off on foot for the Franciscan monastery at Ocaña. For 6 months he persisted in refusing the office, and only yielded at the express command of the pope. He however retained his simple and austere manners, dispensing his revenues, estimated at 200,000 ducats, mostly in charities, wearing the coarse frock of his order, patched with his own hands, beneath the costly archiepiscopal robes which he was obliged to display in public, and abating in no degree the personal mortifications in which he had been wont to indulge, or the strict observance of the Franciscan rule. Hardly had Ximenes been installed in office before he commenced a vigorous scheme of reform among the Spanish clergy, who as a body had departed widely from the discipline prescribed by the church. The difficulties were augmented by the inexorable spirit in which the primate, himself trained in the severest school of the priesthood and conscious of the rectitude of his intentions, carried out his views; and upward of 1,000 Franciscan friars, it is said, quitted the country and took refuge in Barbary, rather than conform to the strict letter of their founder's rules. The queen, however, lent her influence in aid of the reform; and in spite of opposition of a formidable character, a permanent and decided amendment was effected in the morals and discipline of the religious orders. In another field of labor the zeal of Ximenes surpassed his discretion, and his attempts to convert the Moors of the conquered province of Granada, though attended with such success as to justify the remark of Archbishop Talavera, that "Ximenes had achieved greater triumphs than even Ferdinand and Isabella, since they had conquered only the soil, while he had gained the souls of Granada," were productive nevertheless of serious consequences. The Moors of the city of Granada, exasperated by the pertinacity with which he insisted upon baptizing them, and which excited the apprehensions of the more temperate Castilians, finally rose in open rebellion and besieged him in his palace; and to the discontent which this enforced and wholesale conversion excited in other quarters is attributed the rising in the Alpujarras in 1500. One of the least creditable acts in the life of Ximenes was the destruction at this time, in a spirit of pure fanaticism, of a collection of Arabic manuscripts, amounting to many thousands, the loss of which was the immediate cause of the decay of Arabian literature and scholarship in the Spanish peninsula. He however made ample amends for this folly by founding shortly afterward the famous university of Alcala de Henares, the first stone of which was laid in 1500 by his own hands, and which as the work of a private individual was one of the most noble enterprises of the age. In the plans and appointments of the buildings, in the endowments of the several colleges, which provided liberally for indigent students, in the course of instruction, and in the choice of professors, who were invited from the chief European seats of learning, he took a never-failing interest, and often attended the public examinations and disputations of the students to witness the practical operation of his scheme. So beneficial were the results of his labors, that Francis I. of France, visiting the university a few years after the death of its founder, exclaimed: "Your Ximenes has executed more than I should have dared to conceive; he has done with his single hand what in France it has cost a line of kings to accomplish." Another work of enlightened zeal, which alone would have sufficed to render his name illustrious in literary history, was his celebrated polyglot Bible, usually called the Complutensian polyglot, from Complutum, the Latin name of Alcala, where it was printed. It was commenced in 1502 under the direction of 9 eminent scholars, the primate himself assuming the general supervision, and during the next 15 years upward of 50,000 ducats were expended in its preparation, the greater part of this sum being appropriated to the purchase of rare manuscripts. It was the first Bible of the kind ever published, forming the model for all subsequent ones; and Ximenes, who perused the last sheet shortly before his death, offered thanks to Heaven that he had been allowed to witness the completion of a work, since aptly described as "a noble monument of piety, learning, and munificence, which entitles its author to the gratitude of the whole Christian world." On the death of Queen Isabella in 1504, Ximenes became the mediator between the rival claimants of the regency of Castile, King Ferdinand and the archduke Philip, the husband of Joanna, heiress of the crown; and upon the death of Philip, two years later, he assumed, during the absence of Ferdinand in Italy, the presidency of a provisional council or regency which carried on the government of Castile. Owing to the insanity of Joanna, the affairs of the kingdom were for upward of a year in a critical condition; but the vigorous counsels and conduct of Ximenes preserved order until the return of Ferdinand and the assumption by him of the regency. In 1507 Ximenes received a cardinal's hat from Julius II., and was appointed inquisitor-general of Castile. As dignities accumulated upon him, his zeal for the propagation of the Catholic faith grew stronger; and a letter addressed by him to Emanuel of Portugal, and still preserved in the archives of Alcala, shows that, even in that late day, he had formed plans for the recovery of the holy sepulchre. A more practical enterprise than this was an expedition which in the spring of 1509 he conducted against Oran, a noted resort of pirates, and which secured to the crown large spoils and a rich possession on the African continent. But notwithstanding the cardinal had contributed most of the funds for the expedition, he received such unmistakable evidence of the jealousy or distrust of Ferdinand, that he retired to Alcala, and for several years busied himself chiefly with diocesan duties, with the care of his university, or with the preparation of his polyglot Bible. Ferdinand at his death, Jan. 23, 1516, by the unanimous advice of his counsellors, left Ximenes regent of the kingdom until the arrival of his grandson Charles I. of Spain, afterward Charles V. of Germany, who was then living in his Flemish possessions. Fortified in this appointment by a confirmatory letter from Charles, the octogenarian cardinal entered upon the duties of his office (in the administration of which Adrian, dean of Louvain, afterward Pope Adrian VI., nominally shared), with a vigor in no degree diminished by the weight of years. One of his first acts was an ordinance for the enrollment of the burgesses in military corps, whereby, after considerable dissatisfaction and open mutiny in some provinces, was established a species of national guard, which proved a powerful agent in overthrowing the feudal system in Spain, and in preserving his own authority against the pretensions of the grandees. With the aid of this force he succeeded in procuring the proclamation of Charles as king of Castile, notwithstanding the fact that Joanna, though in a state of hopeless insanity, was the legal queen. The grandees, chafing under the rigor of the cardinal's rule, demanded by what powers he claimed to exercise such extensive authority. He showed them the testament of Ferdinand and the letter of Charles, and upon their objecting to these led them, according to the popular story, to a balcony, from which could be seen a body of troops under arms, supported by a formidable park of artillery. "There," he exclaimed, "are the powers which I have received from his catholic majesty. With these I govern Castile; and with these I will govern it, until the king, your master and mine, takes possession of his kingdom." Thenceforth his administration encountered little opposition. Within a few months after assuming the regency he found himself involved in a war with Jean d'Albret, the dispossessed king of Navarre, who, aided by several powerful grandees, made an attempt to recover his kingdom. He was signally defeated, and the cardinal availed himself of the opportunity to dismantle the numerous powerful fortresses of Navarre, with the exception of Pampeluna—a precautionary measure to which Spain owes the possession of her conquest. He also equipped a large armament against the Barbary corsairs; attempted to ameliorate the condition of the natives in the American colonies, the introduction of negro slavery into which he earnestly but ineffectually opposed; extended the inquisition into all parts of the Spanish dominions, confirming and greatly enlarging its powers; and instituted many important domestic reforms by which the royal revenues were greatly increased. But though wielding a power well nigh absolute, and against which opposition was hopeless, Ximenes was too sensible of the urgent necessity of the presence of Charles in Spain, not to importune him to hasten his arrival. At length, on Sept. 17, 1517, the young king landed at Villaviciosa in the Asturias, and the cardinal, having first despatched to him letters of congratulation filled with wholesome counsel, hastened, as fast as the infirmities of age would permit, to surrender his power to his royal master. The Flemings in Charles's suite, however, dreading his influence over a sovereign whom they had hitherto succeeded in controlling, determined to prevent the interview; and at the instigation of these malevolent counsellors Charles addressed to the aged primate a letter, well characterized by Prescott as one "unmatched, even in court annals, for cool and base ingratitude," in which, after formally thanking him for past services, he granted him permission to retire to his diocese and there end his days in tranquillity. Ximenes received the letter while lying ill at Roa, whither he had been removed from the Franciscan convent of Aguillera, near Aranda on the Douro; and from that moment his frame, worn out by anxiety, by fatigue, and by the austerities which he had never relaxed, yielded to a return of fever, of which he died within a few hours, deeply lamented by the people and by the ungrateful king himself. "The variety, the grandeur, and the success of his schemes," says Robertson, "during a regency of only 20 months, leave it doubtful whether his sagacity in counsel, his prudence in conduct, or his boldness in execution, deserve the greatest praise. His reputation is still high in Spain, not only for wisdom, but for sanctity; and he is the only prime minister mentioned in history whom his contemporaries reverenced as a saint, and to whom the people under his government ascribed the power of working miracles." Prescott, in a well conceived estimate of his character and services, draws a parallel between him and Richelieu by no means to the advantage of the latter. The most authentic account of his life is the biography by Alvaro Gomez de Castro, who was specially appointed by the university of Alcala to undertake the task.

XIMENES DE QUESADA, Gonzalo, a Spanish explorer and conqueror, born in Granada, Spain, at the close of the 15th century, died at Mariquita, New Granada, Feb. 16, 1579. He came to America in 1535 as a judicial functionary in the suite of Pedro Fernandez de Lugo, governor of the province of Santa Marta, who chose him to head an expedition against the ancient, industrious, and wealthy nation of the Chibchas, supposed to number more than 2,000,000 souls, on the great plains of Tunja and Bogota, and the neighboring regions about the head waters of the river Magdalena. He set out April 6, 1536, with a force of 720 infantry and 85 horsemen; 105 of his men were embarked on 5 vessels. The latter body suffered severely from the beginning of the expedition; three of the vessels were lost in a tempest with all on board; the others were attacked by the natives, and one only with one person on board succeeded in returning to Santa Marta. On land the column was hindered by the density of the tropical forests, the impetuous streams in their way, the ferocity of the animals they encountered, the heat, the want of provisions, and the constant assaults of the savages. At the end of 8 months they had made no more than 450 miles, and there at Tora or Barranca they were arrested by a flood, which covered the country and rendered it impossible to procure food. Several men and horses perished of hunger, but Ximenes persisted. On reaching the river Bermeja, he fell sick; but when Capt. San Martin expressed to him the desire of all the expedition to return, he replied with an order requiring San Martin to proceed and explore the upper waters of that river with a party of 12 men. The others meanwhile remained with Ximenes, sleeping at night in the tops of trees, and subsisting on 18 ounces of maize and a small piece of horse, dog, or cat daily. San Martin presently returned, and reported that a rich and cultivated country was not far distant. Hereupon Ximenes determined to pass the formidable mountains of Opon; in this attempt he lost 21 men, but gained a height of 5,500 feet above the sea, lifting his horses by thick ropes. He found a land of beauty and abundance, with its population to be conquered, but free from natural obstacles. He now had but 166 men and 60 horses, including some reënforcements sent him by the governor of Santa Marta. Assembling the soldiers, he offered to resign the command, but they unanimously called upon him to retain it, and released him from the duty of obeying the governor of Santa Marta. He resumed his progress on March 2, 1537. The first Indians he met were so terrified by the sight of his horses that they instantly submitted. Approaching at Tunja the court of one of the great chiefs of the Chibchas, he was allowed to enter the palace, but was treacherously attacked as he was about to embrace the chief. The chief was taken, after much slaughter, and Ximenes became possessed of vast riches, including among other objects a golden lantern worth 6,000 ducats. From Tunja he marched upon Iraca, the sacred city of the nation. Here two Spanish soldiers, in pursuit of plunder, accidentally set fire to the great temple of the sun, which had been captured by Ximenes, and it perished with the city after burning several days. Returning toward Tunja, he fought a desperate and bloody battle at Borja against 12,000 natives, whom he defeated, after which he made treaties with several caciques, who voluntarily submitted. He now divided among his soldiers $250,000 in gold and 1,815 emeralds. In order to discover the retreat of another native chief, he put two youths to the torture; one of them died under it, but the other guided the invaders to the desired spot. The chief was surprised, and killed in the skirmish which ensued. His people then undertook a vigorous resistance; but Ximenes overcame them by forming an alliance with one of the pretenders to the succession, and by fighting a battle where the forces on his side consisted of 40,000 natives and 40 Spaniards. His ally was proclaimed king of the Chibchas, having first sworn allegiance to the king of Spain, but was required to deliver the treasures of his predecessor to the Spaniards. After a short imprisonment he promised within 40 days to fill a room with gold and emeralds. Not keeping his promise, he was put to death with cruel tortures. On Aug. 6, 1538, Ximenes founded the city of Bogota. Shortly afterward arrived

Frederman at the head of a band of 160 Spanish soldiers, the relics of those with whom he had been engaged in the conquest of Venezuela, ragged, starved, and miserable, and Benalcazar, the lieutenant of Pizarro and conqueror of Quito, at the head of about the same number, having crossed the continent in triumph, arrayed in purple and silk, with glittering armor and plumes, and a numerous following of natives. Benalcazar conceived the plan of combining with Frederman to expel Ximenes from his conquests; but the latter, more prompt in the work, had already made his bargain with the needy adventurers from Venezuela; he gave Frederman personally $10,000, bought his horses, and incorporated his men among his own soldiers. Benalcazar in turn entered into an arrangement, and appointing a governor *ad interim* of all their territories, the three chieftains sailed May 12, 1539, from the Magdalena to lay their claims before the emperor Charles V. Frederman was totally unsuccessful; Benalcazar was released from obedience to Pizarro and made governor of Popayan; and Ximenes, after following the court to the Low Countries and spending vast sums in ostentatious living in Italy, France, and Portugal, was finally summoned before the royal council, fined 1,000 ducats, banished for one year, and suspended for 5 years from his office as judge and captain. The emperor, however, afterward remitted these punishments, and bestowed on him the title of marshal of the kingdom of New Granada, with perquisites worth about 4,000 ducats yearly. He returned to Bogota in the beginning of 1551, and henceforth distinguished himself as the protector of the people against the adventurous officials and magistrates who sought to oppress them. In 1561 he was unanimously appointed to lead a force raised to repel an expected attack from Aguirre, the ruler of Venezuela; but the latter being assassinated, the invasion did not take place. He was soon afterward named by the Spanish government *adelantado* or governor-in-chief of the kingdom of New Granada, and was now induced to fit out an expedition in search of El Dorado, which he thought to find beyond the territories of Pauto and Papamene. To this enterprise he devoted 3 years, and spent 300,000 ducats in fitting it out, beside 250,000 ducats in its execution. He set out with 300 Spaniards, 2,000 Indians, and 1,200 horses, and returned with 24 men and 32 horses. In 1572 he founded the city of Santa Agueda, 21 miles from Mariquita. He died of leprosy, and by his will declared himself poor, and without direct heirs, his debts exceeding his property by more than 60,000 ducats, and forbidding the erection of any but the simplest monument over his grave. His remains were removed to Bogota in 1597. He left a manuscript work entitled *Sermones*, and a *Compendio historial*, both of which are lost. The authorities respecting his life are: J. Acosta, *Historia del descubrimiento y colonizacion de la Nueva Granada* (Paris, 1849), and Antonio de Plaza, *Memorias para la historia de la Nueva Granada* (Bogota, 1850).

XORULLO. See Jorullo.

XYLANDER, Guilielmus, a German scholar, born in Augsburg, Aug. 20, 1532, died in Heidelberg, Feb. 10, 1576. His real name was Holzmann. He studied at Tübingen and Basel, and became in 1558 professor of Greek at Heidelberg. He left a great number of valuable translations from Greek into Latin, which have been of service to subsequent scholars.

XYLOGRAPHY. See Engraving.

XYRIS. See Yellow-eyed Grass.

Y

Y, the 25th letter of the English alphabet, is in Teutonic and Romanic languages generally a vowel when occurring in the body or at the end of syllables, and an aspirated gutturo-lingual consonant when beginning them, as in the words *yes*, *Yonne*. Its form is derived from the Greek Υ, and in French and Spanish it is called "the Greek I." In English its sound varies from that in *my* to that in *body;* in Dutch, on the other hand, it always has the same full diphthongal sound as in the English *my*. In recent German writing it is the fashion to use it only in foreign proper names, *i* being substituted in such words as *bei* and *sein*, where it was formerly employed; and in recent Dutch writing *ij* is used instead of it, as *Bilderdijk* for *Bilderdyk*. In the Hungarian language, when occurring in syllables after *d*, *g*, *l*, *n*, and *t*, it is pronounced much as in the English words *yes*, *year*, the peculiar sound of the French *l mouillé* being heard in its utterance. In Latin it is used as a small letter only, and never as a capital; while in Spanish manuscript the capital Y is used instead of I.—Y has been called the Pythagorean letter because, its Greek original represents the sacred triad, formed by the duad proceeding from the monad; and also because it represents the dividing of the paths of vice and virtue in the development of human life.

YACHT (Dutch, *jagt;* Ger. *Jacht*, from *jagen*, to chase), a vessel built or fitted expressly for excursions of pleasure, in contradistinction to those adapted for war, for freighting, or for passenger traffic. Mention of such vessels is met with in the annals of remotest antiquity. The prophet Ezekiel must have referred to galleys set apart by the merchants of Tyre for their individual enjoyment, when he spoke of "thy benches of ivory," the "fine linen with broidered work from Egypt which thou spreadest forth to be thy sail," and the "blue and purple from the isles of Elishah which covered thee." Caligula's yacht, a vast floating palace in which he was wont to voyage along the southern coast of Italy, was made of costly cedar wood, the stern studded with jewels and the decks inlaid, and it is even said to have contained porticos and gardens and baths. In all quarters of the globe and in all ages yachts have been known, their size and form keeping pace in civilized Europe with the gradual advance of naval architecture. Within the last quarter of a century moreover, rapid movement having become an essential of travel, and peaceful intercourse with foreign nations common and frequent, these graceful adjuncts to naval strength have been changed in accordance with modern inventions. Steam has in many cases superseded the oars of the ancient and the mediæval galley and the canvas of later date, though symmetry, splendor, commodiousness, and safety are still preserved, as in the steam yachts Reine Hortense of the French and Victoria and Albert of the British sovereign, which may be considered the perfection of their class.—Yacht clubs are associations formed with a view to improvement in yacht building for private owners and encouragement of yacht sailing. They originated within the last 30 years, those of them that are got up on a large scale being recognized and fostered by the governments under which they respectively exist, which furthermore extend to regularly established foreign clubs the privileges they award to their own. These consist mainly of exemption from port charges and light dues, and comparative independence of custom house formalities. The United States, the United Kingdom and several of its colonies, Holland, France, Belgium, and Russia have their national, royal, and imperial clubs; but it is in the United States and in Great Britain that these institutions have taken the firmest hold. The New York yacht club, established in 1844 by 9 gentlemen owning that number of vessels, registered in the following year 17 yachts and 171 members, having a commodious club house on the banks of the Hudson at Hoboken, provided by its first commodore, the late Mr. John C. Stevens. In 1862 these figures had increased to 49 and 449 respectively. In the British isles various causes have tended to develop in this direction the maritime inclinations of the people, among which may be mentioned the possession of ample fortunes by very many men of leisure, and the national instinct for all manly sports in open air. Yacht clubs therefore are there very numerous; and during the summer season regattas are frequent, the sea bordering the coast and the few navigable rivers and inlets being alive with fleets of pleasure vessels under every variety of rig. Yet with all their lavish expenditure and devotion to this amusement, the English yachtsmen were thoroughly beaten at the Cowes regatta of 1851, when the schooner America, of the New York squadron, under charge of Commodore Stevens, won the first prize in a match open to all nations, and fairly distanced all competitors. This triumphant success was partly attributed to her superior model, and partly to the admirable cut and fit of her sails. The practice of lacing the mainsail in cutters and schooners to the mainboom, universal in the United States, was scarcely known in England at that time, though it undoubtedly facilitates a closer hugging of the wind by offering to it a flatter surface. The example has since been much copied in English yachts, though some seamen therein still cling to the old method, under which they can reduce canvas, without reefing or lowering, by simply tricing up the foot of the sail. As a general rule, English yachts are deeper and draw more water than American; nor is the centre board or sliding keel in use among them. But they are for the most part excellent sea boats, a necessity arising from the prevalence of bad weather and rough waters. The statistics of the many clubs, English, Scotch, and Irish, offer striking proof of the nationality of this pursuit. A semi-official list for 1860 records the names of 1,195 decked club yachts owned in Great Britain, of which only 105 measure less than 10 tons. There remain therefore nearly 1,100 ranging from 10 to 480 tons. Of these, 2 exceed 400, namely, a ship steamer of 418 and a 3-masted schooner of 480; 5 are between 300 and 400 tons; 14 between 200 and 300; 79 in all measure upward of 100; and the aggregate of 746 of these vessels amounts to upward of 33,000 tons, which is an average of 45 tons each. In the list appear 25 steamers; but as their introduction into clubs does not tend to promote matches or encourage seamanship, it is not looked upon with much favor. This vast fleet consists almost entirely of schooners and cutters; there are a few yawls, an occasional sloop, and 3 luggers, one of which last registers 209 tons. The schooners, since the memorable visit of the America to Cowes, have been almost universally fore-and-aft rigged, *i. e.*, not carrying square topsail yards on the foremast. The cutter differs from the American sloop in carrying a sail, termed the foresail, on a stay from the masthead to the stem, the jib and flying jib being set on a long running bowsprit. The cutter in fact substitutes two head sails for one used in the sloop; and it is an objection to the rig that the weight of the long spar tends to plunging forward in a sea-way. On the other hand, this bowsprit, not being a fixture, may be run in on deck so as to set on it a reduced jib, or altogether if in severe gales and a high sea it be desirable to dispense with the jib entirely and work under the still remaining head sail. The cutter therefore that loses her bowsprit is not disabled, as a sloop would be under the same loss. The yawl differs from the cutter in carrying a slightly reduced mast and boom, the latter leaving room for a small after-mast stepped close astern, whereon is set a lug-sail sheeted home to the end of a running boom. Luggers undecked are in ordinary use among the French and English fishermen of the channel, and in the last war between France and England many French luggers were decked and armed as privateers. They are 3-masted, and handy craft enough for their purpose when of moderate size, their sails being easily lowered in squalls, while they can be manœuvred equally well under their 3 principal sails, under foresail and mizzen, or under the mainsail simply. But as yachts of large tonnage, though extremely picturesque to the eye and capable of high speed, they are inconvenient for working short tacks, inasmuch as each sail must be lowered and reset whenever the lugger makes a board, and they require consequently a numerous crew.

YADKIN, a river of North Carolina, which rises at the foot of the Blue ridge in Caldwell co., and pursues a S. E. course to Stanly co., whence it flows first S., then E., and again S., to a point about 10 m. above Cheraw in South Carolina, where it takes the name of the Great Pedee, and after a S. S. W. course falls into Winyaw bay. As the Yadkin it receives in North Carolina several affluents, the most considerable of which are Rocky river and Abbot's creek. Its descent is too rapid and it is too often obstructed by shoals to be navigable. The narrows of the Yadkin, near the mouth of Uharee river, are much visited. There are several gold mines in the course of the river.

YADKIN, a new N. W. co. of North Carolina, bounded N. and E. by the Yadkin river; area, 310 sq. m.; pop. in 1860, 10,718, of whom 1,436 were slaves. It has a diversified surface and a productive soil. Iron ore is found. Capital, Wilson.

YAITCE, or Jaitze, a walled city of Bosnia, in the sandjak of Bagna-Looka, 7 m. E. from Ghul-Hissar, upon the left bank of the river Verbitza; pop. about 4,500. It has a strong fortress and a considerable manufacture of saltpetre. It is chiefly noted as the burial place of a Catholic bishop who was killed by the Turks in the 17th century, and to whose tomb an annual pilgrimage is made.

YAK (*poëphagus grunniens*, Gray), an animal of the ox tribe inhabiting the mountains of Thibet and central Asia. The wild yak is larger than domestic cattle, generally black, and characterized by a thick fringe of long hair hanging from the lower part of the body nearly to the ground; the general covering is long, thick, and soft, the head short, horns round and smooth, ears, nose, and nostrils small, forehead apparently prominent on account of the curling hair, eyes large and full, neck short, shoulders high and arched, rump low, and legs very short; the hair of the tail is long and fine as in the horse; they seem heavier than they really are, and have rather a downcast, sullen, and suspicious look; they are found only near the line of perpetual snow. The domesticated yak is nearly 4 feet high at the shoulders, and 7 feet long from nose to tail; they vary in size and color, probably from intermixture with common cattle, but have the fringe on the lower parts; they make a grunting noise, whence the specific name. They are valuable to many of the tribes of wandering Tartars, who live in tents and pasture them from place to place; they are strong and sure-footed, and used in agriculture and as beasts of burden; tents and ropes are made of the hair, and caps and jackets of the skins; the milk is rich and the butter excellent; the latter is kept in skins and bladders for a year, and forms an important article of merchandise. Their tails are esteemed in India as brushes for driving off flies and other insects from men, horses, and elephants; they are often set in costly handles, and are called chowries; the Chinese dye them red, and wear them in their hats. Those with white tails are most esteemed, and the horns are sometimes as white as ivory. This animal is mentioned and well described by Ælian.

YAKOOB-IBN-LAIS, called Suffar from the Arabic name of his original occupation, that of a pewterer or tinker, founder of the dynasty of Suffarides in Persia, born in Sistan, died in A. D. 877. Being reduced to want by his prodigality, he abandoned his trade and became the leader of a band of robbers. Entering the service of Salah-ibn-i-Nasr, ruler of Sistan, he became commander of his army, and at once seized and sent him prisoner to Bagdad, and was himself made governor of Sistan by the caliph. He proceeded to subject to himself other provinces, and finally in 868 expelled the governor of the caliphs from Persia and assumed the sovereign power over the greater part of the country. In 873 he made an unsuccessful attempt upon Bagdad, which he was preparing to renew when he died.

YAKOOTSK, a government of Eastern Siberia, formerly a circle in the viceroyalty of Irkootsk, bounded N. by the Arctic ocean, E. by the province of Okhotsk (which was separated from it and attached to the coast government of Eastern Siberia by decree of Dec. 20, 1858), S. by the land of the Amoor and the Transbaikal region, from which it is separated by the Stanovoi and Yablonoi mountains and the river Vitim, and W. by the governments of Irkootsk and Yeniseisk; area, 1,575,730 sq. m.; pop. in 1858, 222,533. The country is level in the N., but in the S. is covered with low mountains. It abounds in fossil remains; along the sea and by the river courses in the N. fossil ivory is found in the form of the tusks of mammoths. The sea on the N. is open to navigation but a few weeks in summer, and is never free from floating ice. Rivers are numerous, the largest being the Lena, which is the principal avenue of commerce, boats being floated down it in the summer in 30 days, and hauled up by men and horses against the rapid current in 50 days. The climate is severe, and in the most favorable situations the ground is frozen at 3 feet below the surface in summer, and Ermann and Middendorff estimate that the frozen crust is 600 feet deep. Cabbages, potatoes, turnips, a little rye, and berries are produced; but of the inhabitants, the Tunguses, Buriats, and other nomads live by hunting and fishing, while the Yakoots, a nomadic and pastoral people, though they have several fixed villages near the capital, own numerous herds of a small breed of horses, and produce butter which they send for sale on horseback as far as Okhotsk. These tribes generally hibernate in earthen huts, and sally forth in the spring in pursuit of game and fish, returning to their abodes in the autumn. As beasts of burden the more savage use reindeer and dogs. Their religion is Shamanism. The government is divided into the circles of Yakootsk, Verchoyansk, Vilyooisk, Olekminsk, and Svednekolymsk. It contains 6 cities, 51 villages, 3 fortresses, and one outpost.—Yakootsk, a central circle of this government (pop. 127,500), contains many settlements of Russians and descendants of political exiles from the European provinces of the Russian empire. It includes the city of Yakootsk, the capital of the government, situated on the left bank of the Lena, 1,580 m. from its mouth, in lat. 62° N., long. 129° 44′ E., 5,440 m. from St. Petersburg, and 5,040 m. from Moscow; pop. in 1855, 2,823. It stands on a plain surrounded by hills, has 12 churches, and is the principal centre of trade for N. E. Siberia. The Russian American company has an establishment there, and there is a yearly fair, beginning July 1 and ending Aug. 1, where the traffic, especially in furs and provisions, is very important. The sales at this fair in 1853 amounted to $268,500; in 1854 to $135,500; in 1855 to $136,500. The furs and fossil ivory produced in the province in 1854 were sold here for $105,000, in 1855 for $112,500. The mercury freezes at Yakootsk in winter, and the mean summer temperature is 61° F.

YALE, Elihu, the early patron of Yale college, born in New Haven, Conn., April 5, 1648, died July 8, 1721, according to the inscription on his tombstone at Wrexham, North Wales, a former family seat. His father, Thomas Yale, came to New Haven with the first English colonists in 1638, but returned in 1658 with his family. The son never revisited America. About 1678 he went to the East Indies, and in 1687 became governor of Fort St. George, Madras, continuing in that office till 1692. Afterward, having returned to England, he was chosen governor of the East India company, and a little later a fellow of the royal society. In Collins's "Peerage" he is said to have caused the first sale by auction in England. The amount of his gifts to the institution which afterward received his name, in books and money, at different times from 1714 to 1721, was estimated at £500; but the timeliness even more than the amount of his aid made it of great value. In recognition of his generosity, the trustees in 1718 named the new collegiate house at New Haven Yale college; and this designation, limited at first to the edifice, was afterward in the charter of 1745 formally applied to the whole institution. A summary of what is known of his life is given in the "Yale Literary Magazine," April, 1858.

YALE COLLEGE, in New Haven, Conn., one of the oldest and largest of American colleges, was commenced in 1700 as "the collegiate school of the colony of Connecticut." The colonial assembly granted it a charter in 1701, which was renewed and made more liberal in 1745, and has not since been essentially altered. In 1700, ten of the principal ministers of the colony met at New Haven, and associated themselves as trustees to erect and govern a college. The same year, according to the tradition, they brought together a number of books, each of them saying as he made his gift: "I give these books for founding a college in Connecticut." Having received a charter, the trustees met at Saybrook toward the close of 1701, and chose the Rev. Abraham Pierson, of Killingworth, rector. The first student was Jacob Hemingway, who continued alone under the instruction of the rector from March to September, 1702, when the number of students was increased to 8, and a tutor was chosen to aid in their instruction. The college continued at Saybrook until 1716, when it was removed to New Haven, and about that time Gov. Yale began the series of donations which has caused his name to be affixed to the college; a large building was erected; the Rev. Timothy Cutler, of Stratford, was elected rector; the library received important additions; and the number of students was much increased. Since that time, with occasional slight drawbacks, the prosperity of the college has constantly augmented. The only instructors were the rector or president and the tutors till 1755, when a professorship of divinity was established. Other chairs have since been instituted, and gradually four faculties, or departments, in addition to the college proper (or academic department, as it is sometimes termed), have been established. The medical school was founded in 1813; the theological school was recognized as a distinct department in 1822; the law school about the same time; and the scientific school, under the department of philosophy and the arts, was organized in 1846. The government of all these faculties is vested in the corporation, which consists of a president and 10 ministers—the successors of the original founders, and having power to choose their own successors—the governor and lieutenant-governor of Connecticut, and 6 senators of that state, annually appointed; in all 18 fellows, beside the president. The following is a list of the rectors and presidents since the beginning: the Rev. Abraham Pierson, 1701–'7; the Rev. Timothy Cutler, 1719–'22; the Rev. Elisha Williams, 1726–'39; the Rev. Thomas Clap, 1739–'66; the Rev. Naphtali Daggett, 1766–'77; the Rev. Ezra Stiles, 1777–'95; the Rev. Timothy Dwight, 1795–1817; the Rev. Jeremiah Day, 1817–'46; and the Rev. Theodore D. Woolsey, 1846, now (1862) in office. Previous to 1727, 26 classes had been graduated, of the average number of 7. Under Rector Williams 13 classes were graduated, of the average number of 16. President Clap gave degrees to 27 classes, averaging 28 members; Dr. Daggett to 11 classes, averaging 30; Dr. Stiles to 17, averaging 38; Dr. Dwight to 22, averaging 50; Dr. Day to 30, averaging 77; Dr. Woolsey has given degrees to 15 classes (prior to 1862), averaging 97.—The funds of the college have never been fully adequate to its wants, but many munificent gifts and bequests have from time to time been received, some of them directed to specific objects, and others left wholly at the control of the corporation. Among the earliest and most liberal donors should be mentioned Mr. James Fitch, Governor Yale, and Bishop Berkeley. In 1832 a subscription among the alumni added $100,000 to the general funds of the college; and in 1853 a somewhat larger sum was raised in a similar way. The gifts of the state of Connecticut at different times have amounted to about $70,000. Special funds have been from time to time bestowed on the medical, theological, and scientific schools. The most important of such gifts has recently been made by Mr. Joseph E. Sheffield of New Haven, who has presented to the scientific school a building well furnished with laboratories, lecture rooms, &c., costing in all over $50,000, and a fund of equal amount for the maintenance of the school. The college possesses considerable funds for the assistance of indigent students and the reward of the meritorious. The library has a separate fund amounting to about $26,000. The collection of books numbers over 40,000 volumes, exclusive of pamphlets. A fire-proof building was erected for its accommodation in 1845. Beside this collection, two literary societies, the "Linonian," founded in 1753, and the "Brothers in Unity," founded in 1768, have each about 12,000 volumes, which are kept in the college library building, and are equally accessible to all the students. The collection in mineralogy and geology, embracing over 30,000 specimens, is remarkably good, and the scientific apparatus is extensive. The college is also the owner of a number of paintings by Col. John Trumbull, those which illustrate the American revolution being of great value. There is an excellent gymnasium for physical exercise. The number of regular graduates (A.B.) of the college to the year 1862 inclusive was 6,996, of whom 3,553 are dead. The number of instructors in all departments at the present time is about 45, of students 600. The regular course of study in the college proper extends through 4 years, in the law and medical schools 2 years each, in the theological school 3 years, and in the scientific school 3 or 4 years.—"The Annals of Yale College," by Ebenezer Baldwin, was published (2d ed.) in 1838. In 1835 Prof. Kingsley printed in the "American Quarterly Register" a compendium of the history of the college. In 1850 President Woolsey delivered a historical discourse before the graduates, which was also published. In 1857 Prof. Fisher published a history of the college church. The "Yale Literary Magazine" was commenced in 1838, and is still published monthly by the students.

YALLOBUSHA, a N. co. of Mississippi, intersected by the Yallobusha river, a tributary of the Yazoo, navigable for steamboats; area, 900 sq. m.; pop. in 1860, 16,980, of whom 9,531 were slaves. The surface is generally level and the soil highly fertile. The productions in 1850 were 640,775 bushels of Indian corn, 59,335 of oats, 135,424 of sweet potatoes, 65,824 of peas and beans, 173,701 lbs. of butter, and 14,314 bales of cotton. There were 38 churches, 2 newspaper offices, and 1,137 pupils attending schools. The county is intersected by the Mississippi central railroad. Capital, Coffeeville.

YAM, the common name of a genus of plants whose large fleshy rootstocks are used for food. The yam belongs to the natural order *dioscoraceæ*, which comprises twining shrubs with large tubers either above or below the ground; alternate leaves, occasionally opposite, reticulately veined; small, spiked, diœcious flowers, with 1 to 3 bracts each, the calyx and corolla consisting together of 6 segments, which are herbaceous and adherent; the stamens 6, inserted into the base of the sepals and petals; the ovary adherent, with 3 cells of one or two seeds each; styles deeply trifid, stigma undivided, ovules suspended; fruit leafy, compressed or else roundish, either alate or wingless; embryo small near the hilum. The genera of the order are few, but the species are numerous; they are however imperfectly known to botanists; of these, the best ascertained were elucidated through the labors of Dr. William Roxburgh, of the botanic garden in Calcutta, in his *Hortus Bengalensis* (Serampore, 1814). The cultivated or common yam (*dioscorea sativa*, Willd.) is said to be indigenous to the woods of Ceylon and Malabar, but has become widely diffused in cultivation through every tropical region. The tuber is large and irregular; the stems all triangular and winged, either trailing upon the earth or climbing upon contiguous trees to the height of 20 to 25 feet; the leaves are cordate and auricled at base; the flowers are green, and appear in August. This species is sometimes known as the West India yam. The sort most esteemed in the East is the *D. globosa*, having arrow-shaped leaves and fragrant flowers. Of this there are also several varieties with large and purple-tinted tubers, which are regarded as excellent for food. The bulb-bearing yam (*D. bulbifera*, Willd.) is found wild in Tahiti; it bears small angular tubers in the axils of the leaves, which are much esteemed. The prickly yam (*D. aculeata*, Willd.) is similar to the common yam, but its tubers are more delicate; its stems attain the height of 10 to 12 feet. The Brazilian yam (*D. Bra-*

siliensis, Willd.) was first noticed in 1823; its stems grow about 8 feet high, its leaves are lobed, and its tubers are esculent. There are a few species with large rootstocks, but having a harsh taste, such as the 5-leaved yam (*D. pentaphylla*, Willd.), a native of India, growing 10 feet high, with divided leaves and large tubers, but which need preparation before they can be used for food. The 3-leaved yam (*D. triphylla*, Linn.), and a cospecies similar to it, have extremely nauseous roots, even after being long boiled; they are natives of India. The Chinese yam (*D. batatas*) is one of several species long known to Chinese cultivators, but introduced very recently into Europe by M. de Montigny, who sent it to the museum of natural history in Paris, by which means it was widely distributed through France, and thence carried to England in the year 1854. (See BATATAS.)—The wild yam (*D. villosa*, Linn.) is a herbaceous perennial with mostly alternate leaves or nearly opposite ones in fours, heart-shaped, pointed, with 9 to 11 ribs, the flowers pale greenish yellow. It may be found in thickets from New England to Wisconsin and southward; its stems, though slender, are of rapid growth, and the plant is very pretty in gardens if it is trained over framework. The rootstocks are small, knotted and matted together, and of no known value.—The order *dioscoraceæ* contains some other genera, but their tubers are of less value to man. Those of the Hottentots' bread (*testudinaria elephantipes*) have a hardy, woody, and tessellated exterior, which the natives of southern Africa break away and eat the pithy substance beneath, when pinched by hunger; while the roots of the black bryony (*tamus communis*) of Europe are to a great degree acrid, purgative, and emetic.

YAMASKA, a S. W. co. of Canada East, lying S. of Lake St. Peter, an expansion of the St. Lawrence; area, 283 sq. m.; pop. in 1861, 16,045. It is drained by the Nicolet, St. Francis, and Yamaska rivers. Capital, Yamaska.

YAMHILL, a N. W. co. of Oregon, bounded E. by the Willamette river; area, about 750 sq. m.; pop. in 1850, 1,512; in 1860, 3,245. The surface is undulating and the soil, particularly of the E. part, very fertile. In 1850 (since which the area has been reduced about one half) the productions were 22,452 bushels of wheat, 5,988 of oats, 1,627 of potatoes, 34,505 lbs. of butter, and 3,301 of wool. Capital, Lafayette.

YANCEY, a N. W. co. of North Carolina, bordering on Tennessee, and drained by the Nollichucky river; area, about 1,000 sq. m.; pop. in 1860, 8,655, of whom 362 were slaves. The surface is mountainous, and lies between Iron mountain and the Blue ridge. Mt. Mitchell, in the S. E. part, is about 6,500 feet above the level of the sea. The productions in 1850 were 284,016 bushels of Indian corn, 122,544 of oats, 87,542 lbs. of butter, and 1,191 tons of hay. There were 4 saw mills, 28 churches, and 1,600 pupils attending public schools. Capital, Burnsville.

YANCEY, WILLIAM LOWNDES, an American politician, born in Columbia, S. C., in 1815. He early removed to Alabama, where he studied law, and was admitted to the bar at Montgomery, near which city he has since resided, served in both branches of the state legislature, and in 1844 was elected to represent the 3d district of that state in the 28th congress, in place of Dixon H. Lewis, elected to the U. S. senate. He was reëlected in 1845, and served through the 29th congress, but was succeeded in the 30th by Mr. S. W. Harris. He voted in 1845 in favor of the admission of Texas into the Union, and opposed the bill to give to England the notice requisite for the cessation of the joint occupancy of Oregon. After leaving congress, he returned to the practice of his profession in Alabama. In 1848 he was a member of the national democratic convention which met at Baltimore on May 22 and nominated Gen. Cass for the presidency, and in that body offered a resolution declaring "that the doctrine of non-interference with the rights of property of any portion of the people of this confederacy, be it in the states or territories thereof, by any other than the parties interested in them, is the true republican doctrine, and is recognized by this body." This resolution was rejected by 216 nays to 36 yeas. Mr. Yancey was afterward a zealous opponent of the compromise measures passed by congress in 1850, and, now become known as one of the boldest leaders of the extreme party in the South, he appeared as a defender of the repeal of the Missouri restriction and of the efforts for the introduction of slavery into Kansas in 1854–'5. In June, 1858, he wrote a letter which was published in 1860, declaring that no party could save the South, "but if we could do as our fathers did, organize committees of safety all over the cotton states (and it is only in them that we can hope for any offensive movement), we shall fire the southern heart, instruct the southern mind, give courage to each other, and at the proper moment, by one organized concerted action, we can precipitate the cotton states into revolution." In accordance with the spirit of this letter, he urged in 1859 that the legislature of Alabama should pass an act requiring the governor to call a convention of the people in the event of the election of the republican candidate for the presidency in 1860. He was a member of the democratic national convention which met at Charleston April 23, 1860, and withdrew along with the other delegates from Alabama, signing with them a protest setting forth that they withdrew because the convention had refused to incorporate in its platform a declaration denying to the people of a territory any power to legislate against slavery, and affirming the duty of the federal government to protect the owner of slaves in the enjoyment of his property in the territories so long as they remain such. Mr.

Yancey afterward took part in the proceedings of the new convention composed mainly of delegations which, following the example of the representatives of Alabama, had withdrawn from the democratic national convention, and by breaking up the democratic party rendered certain the election of the republican candidate for the presidency. He not only shared in the nomination of Mr. Breckinridge by this seceding convention, but advocated his election before the people. In the autumn of 1860 he delivered a speech in the city of New York, in which he surprised his hearers by the moderation of his language, and his advocating union of all other parties for the defeat of Mr. Lincoln. On Dec. 24, 1860, he was elected a member of the convention of Alabama, which met at Montgomery Jan. 7, 1861. He reported the ordinance of secession, which was passed Jan. 14. On Feb. 27 he was appointed a commissioner to present to the governments of Europe the claim of the confederate states to be recognized as an independent government, and went to the scene of his labors in March, by way of New York. Being elected in Nov. 1861, as a senator from Alabama in the confederate congress, he came home in Feb. 1862, by way of Nassau and Tampa bay, successfully evading the federal blockade, and soon afterward delivered a speech in New Orleans, taking a discouraging view of the confederate prospects as far as foreign aid was concerned, and saying that the nations of Europe were radically hostile to slavery. The same opinions he subsequently expressed in a speech at Montgomery. He took his seat as a senator in March, and was desired by the opposition to President Davis to lead them, but declined that post.

YANG-TSE-KIANG (Chinese, "son of the ocean"), the chief river of Asia, its course lying in the Chinese empire, between that of the Hoang-ho in the N. and that of the Si-kiang in the S. The main stream, according to Lieut. Col. Sarel, takes the name of Yang-tse at the city of Soo-chow, lat. 28° 46′ 6″ N., long. 105° 7′ E.; above that point it is known as the Kin-cha-kiang, or Gold river, gold being washed from its sands; but according to Mr. Oliphant, it is known as Yang-tse-kiang only below the grand canal, a distance of 132 m.; and above that point its name is Ta-kiang, the great river. Its origin is not well ascertained, but according to the best authorities it rises in three small streams on the S. W. side of Bayan Kara, about long. 89°, in Thibet, which combine to form the Murusussu, which flows E. and S. E. for about 1,200 m., until at a point some distance W. of the Chinese frontier, in about lat. 28° N. and long. 102° 30′ E., it is joined by the Ya-lang-kiang, a river 600 m. long rising in the Pe-ling mountains, after which it flows N. E. until about long. 110°, whence it pursues a S. E. course to Tung-ting lake, and then makes another stretch to the N. E. and again bends southwardly to Po-yang lake, when it once more takes a N. E. course until it has reached a point some 75 m. below Nan-king, where it once more turns S. E., and finally discharges its waters through an estuary 30 m. wide into the Pacific, in lat. 32° N., long. 121° E., 305 m. S. of the mouth of the Hoang-ho, its total length being about 3,000 m. It traverses or touches upon the provinces of Yun-nan, Sechu-en, Hu-peh, Kiang-si, Ngan-hoei, and Kiang-su. In 1858 Commander John Ward, of H. B. M. gun boat Dove, forming part of a squadron with Lord Elgin on board, surveyed it from Wu-sung at its mouth to Han-kow, lat. 30° 33′, long. 114° 20′, a distance of 623½ m. In Feb. 1861, an English squadron under Admiral Sir James Hope ascended as far as Yo-chow, at the mouth of Tung-ting lake, lat. 29° 27′ 2″, long. 112° 50′ 5″. On board this squadron were four travellers, Lieut. Col. Sarel of the 17th hussars, Capt. Blakiston of the royal artillery, Dr. Barton and the Rev. Mr. Schereschewsky, American missionaries, who, on a Chinese junk, explored the stream upward as far as Ping-shan, on the frontier of the Chinese empire, but were able to penetrate no further, as they could not pass among the barbarous and independent Mow-tsi, who occupy the country above that point and speak a language different from the Chinese. They were told that about 35 m. above there was a cataract. The shores there are mountainous, and some 20 m. above there is a coal region 18 m. wide, where coal of good quality is extracted in large quantities and carried down the river in flat boats. The stream in this part is 250 yards wide, and for a space of 80 m., except between Kweichow and I-chang (lat. 30° 41′ 5″, long. 111° 3′, 400 m. above Han-kow), where there are obstructions, which however are not insurmountable, it is navigable the whole distance to its mouth, 1,800 m. The first important affluent below Ping-shan, the Min, navigable to Kia-ding, 100 m. from its mouth, enters from the N. at Su-chow, where the Yang-tse becomes 600 yards wide, with 8 fathoms of water and a current of 5½ m. an hour. Su-chow is a large town in the midst of a fertile country producing silk, wax, tobacco, and green tea. Chun-king, also on the N. shore, 200 m. below, at the mouth of the Ho-chow, lat. 29° 33′ 8″, long. 107° 5′, is the most important city of western China, is fortified with a wall of stone, and has a population of 200,000. In this region great quantities of opium are raised; cotton, tobacco, sugar, rice, saffron, and maize are also extensively cultivated. Between Chun-king and St. George's island, 76 m., the travellers saw nothing but poppy fields on both sides of the river. Above Kwei-chow the stream is from 200 yards to ¾ of a mile wide; but in the rapids below it is sometimes only 80 yards wide, with rocky shores 1,000 feet high. Below I-chang the country is mountainous and romantic. The river now becomes from 4 to 17 fathoms deep and 800 or 900 yards wide. The great city of Shahsz', pop. 300,000, is situated on the N. shore, 210 m. below I-chang. It has a quay 2 m. long. Tung-ting lake, 170 m. lower, on the S. shore of the river, is surrounded by a level country, and on its N. shore wheat, turnips, beans, and basket willows are cultivated, while large quantities of tea come down the lake to market. The river Han, which enters from the N. at Han-kow, rises in the Tsan-ling mountains, province of Shen-si, 600 m. from its mouth. The Yang-tse here becomes a mile wide, and navigable at low water for vessels drawing 16 feet. Wu-chang, capital of Hu-peh on the S. shore of the Yang-tse, is elaborately fortified and as large as Canton. Below this city for 180 m., to Po-yang lake, the country is densely populated, filled with hamlets and villages diversified by lakes and hills. The Po-yang lake, 75 m. in length, with its affluents, the Kan, Fu, and Siu, draining the great province of Kiang-si, pours its waters into the Yang-tse in lat. 29° 45′, through a gorge of the Leu-shan or Mule mountains, which here rise to the height of 9,000 feet. At 40 or 50 m. distant, Mr. Oliphant, who accompanied Lord Elgin in 1858, saw a range of lofty mountains on the N. Hence down to Ngan-king, capital of Ngan-hoei, on the N. bank, there are large lakes on both sides of the river; and below that city there is a wide plain on either shore with mountains on the N., and the Ta-hwa-shan peaks on the S. E. At Nan-king the stream is 1,000 yards wide, and deep enough for the largest ships, though the navigation to the sea is difficult owing to frequent changes in the channel. The imperial canal crosses the river 93 m. below Nan-king, at Chin-kiang, formerly an important city, on the S. shore, but now ruined by the rebellion; and the country down to the ocean is flat and productive. The river is nearly as sinuous as the Mississippi, but does not appear to wear away its banks to the same extent. Mr. Oliphant was told that in some parts of its course the water rose in the summer floods to 100 feet above its ordinary level, and in some regions the whole valley is converted into a vast lake by the same cause. Below Po-yang lake there are dikes along the shores in many places.

YANKEE, a familiar term applied in the United States to the inhabitants of the 6 New England states, and since the outbreak of the civil war of 1861 employed by the inhabitants of the seceded states to designate those persons who remain loyal to the government. Foreigners have generally applied the term indiscriminately, and habitually in a disparaging sense, to all inhabitants of the United States. Of the many etymologies assigned to the word, the most probable is that of Heckewelder, viz.: that it is a corruption of the word English by the North American Indians, who pronounced it Yenghees or Yanghees.

YANKEE DOODLE, a lively and popular tune in $\frac{2}{4}$ time, which has been for many years regarded in the United States, and more particularly in New England, as the principal national air. It is of considerable antiquity, having been well known in England in the time of the commonwealth, and according to the common tradition was adopted for the first time as a military air by the provincial troops who assembled at Albany in 1755 to take part in the expedition against the French posts in the Canadas. It became popular during the revolutionary war, and has since held its place almost undisputed as the universal melody of the country.

YANINA. See Janina.

YAPOCK. See Opossum.

YARD MEASURE. See Weights and Measures.

YARKAND, the capital of Chinese Toorkistan, situated on the river Yarkand, 140 m. S. E. from Kashgar, in lat. 38° 19′ N., long. 76° 7′ 45″ E.; pop. from 100,000 to 200,000. It is fortified with earthern ramparts and two citadels of stone. The Chinese garrison is usually 7,000 strong. There are several bazaars, many caravansaries and mosques, and 10 or 12 mohammedan colleges. Silk, cotton, linen, and woollen cloths are manufactured, and jasper, found in the neighboring river, is polished; and an active trade is carried on with Samarcand, Bokhara, Cashmere, &c. The trade in horses is also important, and horse flesh is a common article of consumption. The revenue of the government from customs is estimated at $45,000. The city was formerly the capital of the kingdom of Kashgar, but after being captured by the Usbecks and Eleuths, it was reunited to the Chinese empire in 1757.—The river Yarkand rises in the Karakorum mountains, flows N. N. E., and joins the Kashgar 300 m. below the city, the united streams forming the Tarim, which drains the great plain of Chinese Toorkistan.

YARKE. See Monkey.

YARMOUTH, a W. co. of Nova Scotia, bordering on the Atlantic, and drained by Tusket river; area, 1,125 sq. m.; pop. in 1861, 15,446. Its surface is greatly diversified with mountains and lakes, and its shores deeply indented with bays. The population are chiefly engaged in the cod, mackerel, and herring fisheries. Capital, Yarmouth.

YARMOUTH, a borough and seaport in the county of Norfolk, England, at the mouth of the Yare, 24 m. E. of Norwich; pop. in 1801, 14,485; in 1861, 34,803. It lies on both sides of the river, which is crossed by a drawbridge. The chief town of the borough, known as Great Yarmouth, occupies a narrow peninsula, about 1 m. long and $\frac{1}{2}$ m. wide, between the sea on the E. and the Yare on the W., on which side is the finest quay in England, about 1 m. long. Great Yarmouth contains the guildhall, the town hall, the church of St. Nicholas, founded in the reign of William Rufus, various other churches, a monument to Nelson 144 feet high, a theatre, &c. Little Yarmouth, on the W. shore of the Yare, consisting mainly of private residences, and the village of Gorlestone on the S. toward the entrance to the harbor, were annexed to the borough by the reform act. The harbor, built and maintained at great expense and defended by coast batteries, is accessible to vessels of 200 tons; beside fishing smacks, more than 500 vessels belong to the port. The trade is principally with the N. of Europe and the Mediterranean. In one year 85,000 bbls. of herring and mackerel have been cured here. Ship building is carried on, and crapes and other silk goods are manufactured. The borough sends two members to parliament. —The site of Yarmouth was formerly the bed of an estuary, and became solid ground in the beginning of the 11th century. The mouth of the river has since 1350 been diverted about 4 m. to the S. In the reign of Edward I. a wall 6,720 feet long, with 10 gates and 16 towers, was built around the E., N., and S. sides of the town. The remains of convents destroyed at the reformation may still be seen.

YAROSLAV. See Jaroslav.

YARRELL, William, a British naturalist, born in St. James's, Westminster, in June, 1784, died in Yarmouth, Sept. 1, 1856. He was a newspaper agent, and became a naturalist from being a sportsman. In 1824 he was chosen a member of the Linnæan society, and henceforth constantly contributed to its "Transactions" and to other periodical publications on natural history. He was the first to prove that the whitebait is a distinct species of fish, and not the young of the shad or herring. Beside some 70 monographs on almost every department of zoology, he wrote "The History of British Fishes" (2 vols. 8vo., 1836; 2d ed., 1854), and "The History of British Birds" (2 vols., 1843).

YARROW, a river of Selkirkshire, Scotland, celebrated in poetry. It rises at Yarrow-cleugh 1¼ m. E. from Loch Skene, and pursues a general E. N. E. course of 25 m., flowing through Lochs Lowes and St. Mary, and uniting with the Ettrick, a tributary of the Tweed, 1½ m. above Selkirk. On its banks are the ruins of Newark castle, and Bowhill, the seat of the duke of Buccleuch. The current of the Yarrow is fierce and precipitous. It receives about 40 small tributaries.

YATES, a W. co. of New York, bounded E. by Seneca lake, and partly on the S. W. by Canandaigua and Crooked lakes, the latter of which extends half way across the centre of the county; area, 1,370 sq. m.; pop. in 1860, 20,291. The surface is generally undulating or hilly, and the soil is a fertile sandy loam. The productions in 1855 were 187,032 bushels of wheat, 174,181 of Indian corn, 160,457 of oats, 152,134 of barley, 57,912 of potatoes, 143,773 of apples, 717,259 lbs. of butter, 259,401 of wool, 245,000 of flax, and 15,850 tons of hay. There were 15 grist mills, 19 saw mills, 6 iron furnaces, 48 churches, 3 newspaper offices, and 7,536 pupils attending public schools. Iron ore is found. The county is intersected by the Elmira and Canandaigua railroad, and by the Crooked lake canal. Capital, Penn Yan.

YATES, Robert, an American statesman and jurist, born in Schenectady, N. Y., Jan. 27, 1738, died Sept. 9, 1801. He was educated and studied law in New York city, and after his admission to the bar settled in Albany, where at the commencement of the revolutionary troubles he was a member of the committee of public safety. Soon afterward he was elected a member of the provincial congress of New York. He was a member of the convention that framed the constitution of his native state, in 1777 was appointed judge of the supreme court of New York, and in 1787 was a member of the convention that framed the constitution of the United States. His notes of the secret proceedings and debates of this convention were printed after his death. In 1790 he was appointed chief justice of the state of New York. On his retirement from the bench in 1798 he was appointed a commissioner to settle disputed titles to lands in the military tract, an office which he held until near the close of his life.

YATES, William, D.D., an English missionary, born at Loughborough, Leicestershire, Dec. 15, 1792, died at sea, July 3, 1845. He studied for the ministry of the Baptist church at Bristol college, was ordained in Aug. 1814, and sailed for Calcutta, April 16, 1815. He settled at Serampore, preaching and assisting Dr. Carey in the work of translation, after whose death he devoted himself entirely to the latter employment. In 1827 he visited England, taking America in his route, and returned to India in 1829. In 1845 he embarked again for England, on account of his health, but died on the passage up the Red sea. He translated the whole Bible into Bengalee; the New Testament, the Pentateuch, Job, the Psalms, the Proverbs, the Song of Solomon, Ecclesiastes, Isaiah, and Daniel into Sanscrit; and the New Testament into Hindee and Hindostanee. He also prepared in Sanscrit a dictionary, grammar, vocabulary, several school books, and an expurgated edition of the *Hitopadesa* and *Nalodaya;* numerous school books in Hindee, Hindostanee, Arabic, and Bengalee; and translations of Bunyan's "Pilgrim's Progress" and Baxter's "Call to the Unconverted." In English he published a series of essays in reply to Rammohun Roy; "Memoirs of Chamberlain;" "Memoirs of Rev. Samuel Pearce;" and several philological essays, on Hindostanee particles and the theory of the Hebrew verb. The East India company, 4 or 5 years before his death, offered him a salary of $6,000 a year if he would enter their service and prepare text books for the government schools; and when this was refused, $3,000 a year if he would spend half his time in their service, which he also refused, though never receiving half that salary as a missionary.

YAUPON. See Holly.

YAWNING, a well known modification of the respiratory movements, being a deep inspiration, accompanied by a kind of spasmodic contraction of the muscles of the jaws, great elevation of the ribs and shoulder blades, and wide opening of the mouth; it is one of the unmistakable signs of sleepiness, and usually ends in a prolonged expiration or a succession of short expirations, with more or less inarticulate vocal accompaniments. Though generally involuntary, it may be performed by the effort of the will, and is particularly liable to be excited by the sight of others yawning. It is sometimes in disease a symptom of deficient aëration of the blood; the nervous centre is the medulla oblongata.

YAZIKOFF. See Jazikoff.

YAZOO, a river of Mississippi, formed by the junction of the Tallahatchie and Yallobusha rivers at Leflore in Carroll co. From the junction it pursues a serpentine course, generally bearing S. W., till it enters the Mississippi 12 m. above Vicksburg. Its length is said to be about 290 m. It is a very narrow, deep, sluggish stream, flowing through a rich alluvial country, and is navigable through its whole extent. Its largest branch, the Tallahatchie, is navigable for 100 m. above its junction with the Yallobusha.

YAZOO, a W. co. of Mississippi, bounded S. E. by Big Black river, and intersected by the Yazoo; area, 650 sq. m.; pop. in 1860, 22,373, of whom 16,716 were slaves. The surface is level, and the soil a rich alluvium. The productions in 1850 were 556,505 bushels of Indian corn, 128,272 of sweet potatoes, and 22,052 bales of cotton. There were 14 churches, and 543 pupils attending public schools. Capital, Yazoo City.

YEAR, a period of time well known within and near the temperate zones of the earth as that in which the four seasons run through their course, and indicated upon all parts of the earth's surface by the apparent return of the sun at midday to the same position in the heavens, as from its place at our summer or winter solstice forth and back to the same place again, and the length of which period corresponds nearly to the time of 365¼ diurnal revolutions of the earth, *i. e.*, days. For the astronomical principles that determine or explain many of the points in relation to the year, see Astronomy, Sun, Moon, Precession, and Nutation.—The year, as just defined, or that in which the sun, from having its place over either tropic, moves to the other and returns, or (what is the same thing) starting from the equator at the vernal equinox of our hemisphere performs its complete circuit to the vernal equinox again, is, from the circumstance by which it is thus defined, termed the tropical year; and because this is the period recognized in legislation and history as the year, it is also called the civil year. Its mean length is 365.2422414 mean solar days, or 365d. 5h. 48m. 49.7s. But because the point in which the sun's apparent path in the heavens (the ecliptic) intersects the equator at either equinox, the vernal for example, is every year somewhat anticipated, or moves slowly backward along the equator, so that in reality the sun comes to the equator each year at a point a little before that in which it met it last (see Precession), it follows that, when the equinox returns, the earth has not yet arrived at the same point in its annual revolution at which it was at the preceding equinox, and the sun, as a consequence, has not completed its apparent circuit among the fixed stars, *i. e.*, through the signs of the zodiac. The period required by the sun to move from a given star to the same star again is thus longer than the tropical year, and is called the sidereal year. Its mean length is 365.2563612 mean solar days, or 365d. 6h. 9m. 9.6s. Again, the perigee, or that point in the earth's orbit in which it is nearest the sun, advances or moves forward, so that the earth is in fact longer in returning to the perigee than either of the periods now named. The year as determined by a return to the perigee is termed the anomalistic year; and its length is 365.2595981 mean solar days, or 365d. 6h. 13m. 49.3s. The sidereal and anomalistic years have an astronomical importance mainly; the year intended, when no distinctive term is applied, being always the tropical or civil. The length of the anomalistic year does not sensibly vary; the sidereal and tropical years, however, slowly change, the changes depending primarily on the facts that the yearly precession is increasing, but also at a variable rate. Laplace, whose estimate of the tropical year is that above given, concludes that its length is now 13 seconds less than in the time of Hipparchus. The lengths of the four seasons, astronomically measured, are very nearly as follows: from the vernal equinox to the summer solstice, 92d. 22¾h.; from the latter to the autumnal equinox, 93d. 13½h.; from this to the winter solstice, 89d. 16¾h.; from this to the vernal equinox, 89d. 1½h. For an account of the years and calendars of different nations, see Calendar and Chronology.—The further purpose of the present article is merely to trace the successive steps in the adaptation of the mode of reckoning which has become adopted by most civilized nations to the tropical year, this mode being directly derived from the calendar of the early Romans. Obviously, the aim in attempting to devise a perfect calendar must be to arrive at a system by which the tropical year shall be as nearly represented as possible, while yet the relations of the respective days and months to the seasons or parts of the year shall be maintained through the longest periods of time. And although, since the earliest attempts at accomplishing these objects, some irregular and arbitrary changes were during a long period introduced into the reckoning of time in different European countries, the general tendency has still been toward the attainment of the original purpose and a uniformity of calendar. The chief difficulty in the way of exactly conforming the circuit of the months to the tropical year, has consisted in the extremely incommensurable fraction of a day over the 365 which the natural year presents. For convenience, the civil year must begin with a day, and must contain some number of complete days. But if any number of complete days is maintained invariable, the effect must be in time that the days and months gain or lose on the seasons, and the latter are, during the lapse of long periods, thrown successively into all parts of the civil year. Such was the want of harmony between the early Roman civil year and the tropical, that in the time of Julius Cæsar the months in which spring occurred were those originally belonging to the season of summer. Historians have variously stated the original Roman year to have contained 12 and 10 months. The latter was probably at first the real number. This year, as fixed by Numa or Tarquin, is said to have consisted of 355 days. It began with the month Martius (March), and the 5th and 6th months in it were called Quinctilis and Sextilis. According to some authorities, the decemvirs endeavored to correct the variation which was growing up between the civil and the tropical year; but the purpose, if undertaken, appears not to have been accomplished. Meantime, however, the months Januarius and Februarius had been introduced, making the year 12 months in length; but the beginning of the year, which was intended to occur at the winter solstice, had receded, until in Cæsar's time it actually took place some 70 days previously. It was both this irregularity and its source that Cæsar, aided by the astronomer Sosigenes, undertook in the 46th year B. C. to correct. Adding to the current year the number of days requisite to extend it to the winter solstice, and, it appears, about 10 days beyond, he ordered that its length should accordingly be 445 days; the next year and all following were to have the length of 365¼ days, but for convenience the fraction was to be introduced in form of an additional day every 4th year. In commemoration of his connection with this change he altered the name of the month Quinctilis to Julius. The pontifices who subsequently enforced Cæsar's rule, mistaking his intention, added the intercalary day every 4th year counting inclusively, namely, on the 4th, 7th, 10th, and so on; and they had thus inserted 3 days too much, when Augustus, in 8 B. C., interfered to correct the error. He directed that the next 3 intercalary days, or bissextiles, should be omitted; and that the years corresponding to the series 5, 9, 13, &c., from the date of the Julian reformation should thenceforward be the bissextile or leap years —these falling in the present reckoning from the Christian era, as is well known, on the numbers which are evenly divisible by 4. He also transferred to the month Sextilis a 31st day, and changed its name to Augustus. The Roman months were then Januarius, Februarius, Martius, Aprilis, Maius, Junius, Julius, Augustus, September, October, November, December—names in which the origin of our own is very obvious. The error of the Julian calendar was thus that it made each year 11m. 10.3s. too long. This excess would amount in 400 years to about 3 days. At the like rate, in 24,000 years midsummer would occur in December, and midwinter in June. The desirableness of such a correction of the calendar as would keep the religious festivals in the same part of the tropical year, that is, in the same season, as that in which they were fixed by the council of Nice, A. D. 325, had been for some time discussed, before it was finally decided on by Gregory XIII., under authority of the council of Trent. The Gregorian reformation, at once accepted in Italy and Spain, omitted from the calendar of the year 1582 10 days (the excess since 325, the previous accumulation being rejected), corresponding to Oct. 5–14 inclusive, so that the day following the 4th of that month was reckoned the 15th. In France, England, and other countries, this change was not adopted until later; in Russia it has not yet been made. In England it took place in Sept. 1752, the day following the 2d of that month being reckoned the 14th, since the excess at that time amounted to 11 days. The time of this change, for all the countries in which it has been made, constitutes the transition from "old style" to "new style"—the distinction being made as a reminder of the condition under which only can dates before and after the change be strictly compared. Though the change now described sufficed very nearly to correct the whole excess in the reckoning of time then past, it was necessary to devise the means of exact correction for the future also. A second feature of the Gregorian reformation was directed to this end. To accomplish this, while as the rule every year evenly divisible by 4 was to continue a leap year, the excess in the length of the year corresponding very nearly to 3 days in 400 years, it was ordered that 3 of every 4 centurial years should not be counted leap years, or that the centurial years should be leap years only when the figures in their number preceding the 00 are divisible by 4. Thus, the year 1600 was a leap year, and the year 2000 is to be such; the years 1700, 1800, and 1900 are not leap years. The deviation of the Julian calendar from the true year went on steadily from the first, and until, for each country adopting the Gregorian reformation, it was corrected. Of course, after the change from O. S. to N. S. in any country, the omitted centurial leap years prevent any sensible variation of the calendar from the tropical year; and for the records of each country, ever after such time, the number of days' difference between old and new style remains unchanged. The requirement to reconcile old and new style dates, or reduce the former to the latter, may run forward indefinitely while our present mode of reckoning continues. The need of reconciling the two styles actually runs back also from the time of the Gregorian reformation to the date of the council of Nice, A. D. 325, the correction regularly diminishing, from 10 days in and near 1582, to

1 day in and near A. D. 455. Practically, however, the reduction of old to new style usually requires to be made only about and subsequently to the date of the change of calendar for the several countries, as in comparing dates before and after that change, or those of a country in which at a given time it has been made with those of one in which it has not. The reduction of one style to the other may thus require to be made in various ways. For that most commonly required, the rules, as practised by historians, may be thus stated: Since a Julian leap-year day (Feb. 29), not allowed in the Gregorian calendar, would first occur in 1700, it follows that for records of Italy, Spain, or other country adopting the change of calendar previous to March 1, 1700, the conversion of old to new style requires that we should from the time of such change and ever after add to the date O. S. only 10 days; but for countries which had not made the change of calendar prior to the date last named, the difference at that date became 11 days; so that in the records of England and the United States, for which countries the change occurred in 1752, and for any other countries in which it came between the dates of the Julian leap-year days of March 1, 1700, and March 1, 1800, the addition required is 10 days up to the former of these dates, and 11 days thence up to the latter. In Russian records, and those of any other country not having made the change at the date last named, another added leap-year day of the Julian reckoning makes the change required thenceforward up to March 1, 1900, equal to 12 days; and since both calendars admit the year 2000 as a leap year, it will for such countries be from the last given date up to March 1, 2100, equal to 13 days. For periods, therefore, ending in the years 1700, 1800, and 1900, Russian dates require for conversion into those of the new style the addition of 10, 11, and 12 days, respectively. As examples of the reduction in English and United States history, Oct. 5, 1582, O. S. = Oct. 15, 1582, N. S.; Sept. 3, 1752, O. S. = Sept. 14, 1752, N. S.; but the date of the "landing of the pilgrims" at Plymouth, which in O. S. was Dec. 11, 1620, becomes in N. S. in fact Dec. 21, 1620, and not Dec. 22, as, through the error of the antiquary who calculated the change by adding 11 days, it was made. Calculation shows that even the Gregorian reformation leaves a small excess of time, which in 1,000 mean Gregorian years would amount to about a quarter of a day, or more strictly to 1 day in 3,600 years. To rectify this deviation, Delambre proposed further to modify the rule above stated, so that the centurial years which are multiples of 3,600, as 3,600, 7,200, 10,800, &c., although their significant figures are divisible by 4, shall not be leap years—a principle of some importance, doubtless, to the people of the times to which it relates.

YEAST, a frothy substance generated in the fermentation of vinous solutions and of vegetable juices generally, and which, though present in very small quantity, serves to induce a chemical reaction in saccharine and farinaceous liquids, by which it is largely reproduced, causing the sugar present to be resolved into carbonic acid and alcohol. It is for thus exciting the vinous fermentation that it is of value. (See BREAD, BREWING, DISTILLERY, and FERMENTATION.) For most purposes yeast is obtained by the fermentation of an infusion of malt, either the wort used in the process of brewing, or one specially prepared, and is then a thick pasty fluid, which, when examined by the microscope, appears to consist of grayish globules from $\frac{1}{3000}$ to $\frac{1}{4000}$ of an inch in diameter. As soon as fermentation begins, these corpuscles move about in all directions, enlarge, and become covered with projections, which finally drop off, become independent corpuscles, and repeat the same operation, so as to increase the quantity of yeast to an extent limited only by the quantity of malt infusion employed. According to Payen and Persoz, its essential operative ingredient is a peculiar azotized matter, closely resembling albumen, gluten, caseine, &c., and not sugar in a state of decomposition, as was imagined by Dr. Thomson. If added to a solution of pure sugar, it gradually disappears; but with vegetable juices or infusions containing gluten as well as sugar, it is indefinitely reproduced as above described. The yeast employed by bakers was formerly derived entirely from the brewers, but is now generally made expressly for their use, with a wort prepared from pure malt. Ale brewers' yeast, and that from distilleries, is well adapted for bread making, but the quantity produced is insufficient. That from porter is too bitter and highly colored to be used without previous washing. If the solid part of yeast is strained off from the accompanying liquid, it forms a mass like soft cheese, and in this state may be transported to considerable distances, and forms an important article of trade in Germany and Holland. The German yeast, which is largely imported into England, and employed for baking cakes and fancy bread, is made by putting the yeast of Bavarian beer (which, instead of floating on the beer, sinks to the bottom) into thick sacks of linen or hempen yarn, which after draining are placed between boards and exposed to an increasing pressure till a mass of a thin cheesy consistence is obtained; this is afterward broken into small pieces, which are wrapped in separate linen cloths, and these are packed for exportation in waxed cloths, or in a pitched cask, closed air-tight.—Pliny informs us that yeast was employed in his time in Spain and Gaul to raise bread, which he intimates was much lighter than that made elsewhere, where leaven, or dough in a state of fermentation, was used. Leaven, however, afterward took its place in both countries, and it was not till nearly the end of the 17th century that yeast was imported into Paris from Flanders, and began to be pretty generally used. The innovation at first met with much opposition; the faculty of medicine declared it prejudicial to health, and its use was prohibited under severe penalties. The bakers, however, persisted in using it, importing it secretly in a solid form; and the superiority of yeast bread finally became evident to all, and the prohibitory laws by degrees fell into oblivion. At present it appears to be used in every civilized country, and notwithstanding the multitude of substitutes which have been proposed, some acting like it as a ferment, and some merely inflating the bread, none has yet generally superseded it for the manufacture of bread of the best quality. The invention of Prof. Horsford, of Harvard university, however, which consists in forcing carbonic acid gas into the dough under pressure, the expansion of which renders the bread spongy, is now coming into extensive use, and bids fair to take the place of yeast in a great measure for the manufacture of bread on a large scale. Its products, known as "patent aërated bread," are of most excellent quality. In warm climates, where it is difficult to obtain or preserve yeast, other ferments are substituted. In the East Indies "toddy," or the fresh juice of the cocoanut, is used, and in the West Indies "dunder," which is a liquor remaining after the distillation of rum.—In medicine, yeast has been employed with advantage as a remedy in low fevers of a typhoid character and in hectic fever, but is not much used, as its tonic and stimulating effects may be more conveniently obtained. In diabetes, and internally for boils, it has also proved useful. Externally applied, it is very useful in cases of foul and sloughing ulcers, the fetor of which it corrects, while it affords a gentle stimulus to the debilitated vessels, and is generally employed mixed with flour in the form of a poultice.

YEAST PLANT. During the active fermentation of beer, if a minute quantity of the scum which rises to the surface be examined with a powerful microscope, numerous vesicles will be noticed, which are either single or joined together into a sort of necklace, constituting a fungus designated by Turpin as the *torula cerevisiæ;* and while the fermentation continues these beaded filaments increase rapidly in number and in size. This, however, is no more than a single form or condition of a fungus which assumes many phases in its development. Thus, we have produced from the *torula* a growth of entangled filaments of the most delicate character, which in subsequent course of development have become an aërial-growing mould known as *penicillium glaucum*, and identical with that resulting in the final stages of the vinegar plant. (See VINEGAR PLANT.) The yeast plant is no more, then, than a peculiar condition of mouldiness found in various substances undergoing chemical changes.

YEDDO, the political capital of Japan, and the residence of the tycoon or secular emperor, situated on the S. E. side of the island of Niphon, in lat. 35° 40′, at the head of a bay in the N. W. angle of the gulf of Yeddo. The bay is 7 m. long and as many wide, and is so shallow that ships of large draught cannot approach within 5 m. of the shore. Five forts of earth faced with stone and armed with heavy guns have been constructed on a shoal which stretches in front of the city at the distance of a mile and a half. The visitor arriving by water perceives few indications of an approach to a great city. No wharfs are seen crowded with ships, and the harbor usually displays only a few junks and a small fleet of fishing boats. Picturesque spots along the bay are occupied by tea houses and other places of pleasure resort. The few elevations that break the level of the plain on which the city is built are occupied by temples whose high walls and peaked roofs are begirt with hedge rows and embosomed in the shade of overhanging trees, while here and there from the mass of common dwellings arise the white-walled castles or palaces of the princes of the empire. The O-oka, or "great river," enters Yeddo from the W. and flows through it into the harbor. Numerous canals diverge from it to every part of the city. Wooden bridges cross the river and the canals at long intervals, one of which, called *Nippon-bas*, or "the bridge of Japan," is famous as the starting point from which distances are measured to all parts of the country. The city, including its suburbs of Sinagawa and Omagawa, extends from E. to W. about 16 m., with an average breadth of 8 m. The number of inhabitants is known to foreigners only by estimate, but the latest and most intelligent observers are of opinion that it cannot be less than 3,000,000. The houses are mostly of wood, stone and brick being used as little as possible in consequence of the frequency of earthquakes. The streets are broad and clean, being swept several times a day. Sewerage is thoroughly effected by well paved gutters and subterranean conduits. The temples occupy with their grounds nearly one fourth of the city on the right bank of the river, and to these are attached a numerous priesthood. The most celebrated of these temples is that of Asaksa Kanon, to which pilgrims resort from the most distant parts of Japan. The outer gateway of this shrine is a massive structure of heavy timbers supporting an elaborately ornamented tiled roof. The second gateway, several hundred feet beyond the first, is adorned with sculptured columns and gilded friezes, and leads into a spacious court planted with immense trees. The temple itself is neither large nor magnificent, but is built of wood and painted bright red. Massive wooden pillars support the timber roof, the ceiling of which is panelled in squares of color and gilding. The residence of the tycoon is a sort of citadel or fortress, several miles in circumference, encompassed by moats and stone walls, and connected by drawbridges with the surrounding city. It contains a number of palaces, and within its walls are lodged troops, officers, and retainers to the number of at least 50,000 men, beside women and children. The palaces of the daimios or feudal princes, all of whom are obliged to maintain residences in Yeddo, and to live there during alternate years or half years, are vast walled enclosures, containing in some cases thousands of retainers, and comprising within their walls extensive parks and groves. The English bishop of Victoria, who visited the city in 1860, says: "I have heard the opinion expressed by a friend who has visited all the capitals in Europe but one, that in the external beauty of its well wooded scenery and the general picturesque appearance of the surrounding view Yeddo surpasses every city of western countries. The proud independence of the great daimios prevents a visitor from entering within their spacious and richly planted grounds. A long wall of dark-colored *chunam*, crossed by square or diamond-shaped white trellis-work of the same material, is the only object which is visible from without. The basements alone are generally constructed of solid stone material. What we are accustomed to dignify with the name of a palace is probably a one-storied building covering a vast area, and having only in a small portion of its space any upper rooms; huge comfortless structures, containing few articles of luxury and appliances of art beyond specimens of lacquered cabinets, porcelain vases, and the ordinary furniture of a Japanese dwelling. Every thing in this official quarter of the daimios appears to be on a large rather than a magnificent scale—fine macadamized roads, extensive parks and groves, a grand sweeping slope of undulating lawn, a large serpentine sheet of clear water in the moats, and a long range of palace-wall enclosures, covering a vast area of space, though of moderate elevation adapted to the insecure foundation of this region of earthquakes." "The ride through the more busy and frequented streets in which the trading community dwells," says the same writer, "tends considerably to diminish, if not to dissipate, some of the pleasant impressions made by a visit to the official quarter or the 'west end' of the city of Yeddo. . . . . The shops were of the usual commonplace character, and scarcely averaged the general appearance of those of a Chinese street. The redeeming point was the width of the roads and the absence of rude jostlings from passing crowds in closely packed thoroughfares. There were the same shop signs as elsewhere in Japan, huge paper representations of a fish flying a flag aloft in the air denoting a fishmonger's stall, or a large exaggerated image of a pile of coins pointing out the money changer's office. Silk mercers' shops were also very numerous, with touting men and boys pacing before the shop open to public view, and vociferously inviting the passers-by to enter and bestow their custom. Large fire-proof treasure depots were visible rising above the level line of roofs, and rendered by thick casings of stucco plaster impervious to the devouring flame. Lofty wooden houses or stages were placed in every ward, and patrols marched day and night in one incessant round with jingling rod of office to watch and give the first alarm of fire. Bathing houses also prevailed, with all the usual violations of western ideas of delicacy and decorum." Tea houses or tea gardens, to which the people resort to drink tea and refresh and recreate themselves, are very numerous, and form a conspicuous and attractive feature of the city. Probably no other city in the world has so large a proportion of its inhabitants living in idleness as in Yeddo. The public purveyors of amusement naturally find a lucrative vocation in such a city. The Japanese are fond of sports and holidays, and wrestlers, actors, and jugglers are consequently in great demand in the capital. Masquerades and fancy costumes are also a common amusement of the people in the pic-nic excursions which they frequently make in fine weather. Yeddo is subject to terribly destructive fires and earthquakes. A fire in 1806 destroyed the palaces of 37 princes and 1,200 lives. In 1854 an earthquake laid a large part of the city in ruins, and it is said that 200,000 persons perished in the falling buildings or in the conflagrations occasioned by the earthquake.—The elevation of Yeddo into the rank of second capital of Japan dates from 1616, when it became the permanent residence of the tycoon. In 1854 the American commodore Perry, in command of a powerful squadron, entered the bay of Yeddo, and negotiated a treaty with the Japanese government by which several ports of the empire were opened to foreign commerce. Since 1858 legations from the United States and from the principal European powers have been permitted to reside in the city, where, though protected by the imperial forces and kindly treated by the people, they have occasionally been murderously attacked by the retainers of some of the great daimios, who are bitterly opposed to foreign intercourse.

YEKATERINBURG. See Ekaterinburg.

YEKATERINOSLAV. See Ekaterinoslav.

YELISAVETGRAD. See Elisabetgrad.

YELL, a W. co. of Arkansas, bounded N. E. by Arkansas river, and intersected by its tributaries Fourche la Fave and Petit Jean rivers; area, 936 sq. m.; pop. in 1860, 6,333, of whom 998 were slaves. It has a diversified surface, and the soil is generally fertile. The productions in 1850 were 127,335 bushels of Indian corn, 5,208 of wheat, 68,575 lbs. of butter, and 755 bales of cotton. There were 11 cotton ginning mills, 4 tanneries, and 200 pupils attending public schools. Capital, Danville.

YELLOW BIRD (*chrysomitris tristis*, Bonap.), the American goldfinch or thistle bird. It is 5¼ inches long and 8¾ in extent of wings, of a bright gamboge yellow color, with black crown, wings, and tail; band across wings, inner margin of tail feathers, and upper and under tail coverts, white; in winter it is yellowish brown above and ashy brown below, very much like the females at all seasons. It is generally distributed over North America, seldom alighting on the ground except to drink and bathe; many are usually seen together, feeding on the seeds of hemp, sunflowers, lettuce, and thistles, and sometimes on elder and other berries; the song is very pleasing, and for this as well as its beauty, sprightliness, and docility, it is kept in cages; it is familiar, and lives for years in confinement, practising many of the tricks taught to canaries, with which it will breed. Like the European goldfinch, it makes its nest of lichens fastened together with saliva, and lined with the softest substances it can procure; it is a small and very neat structure, placed in an alder, poplar, or some other tree or bush; the eggs are 4 to 6, white tinged with bluish, with reddish brown spots at the larger end; one brood only is raised in a season, and the young follow their parents a long time, being fed from their mouths. Several other nearly allied species are described in vol. ix. of the Pacific railroad reports.—The Summer Yellow Bird, or yellow-poll warbler (*dendroica æstiva*, Baird), is of about the same size, with the head and lower parts bright yellow; rest of upper parts yellowish olivaceous, the back, breast, and sides streaked with brownish red; tail bright yellow, with the outer webs and tips brown; 2 yellow bands on the wings; bill dark blue; in the female the crown is greenish olive. It is found throughout the United States, going north to lat. 68°, south to Central and South America and the West Indies, and extending from the Atlantic to the Pacific; numerous in New England in the summer, it goes south in autumn in small flocks, chiefly at night; its song is not melodious; the food consists principally of insects, which are sought for among the leaves and blossoms. It is a familiar bird, building in bushes, often very near dwellings and in thickly settled places; the nest is strongly fastened to the fork of a brush, and is made externally of hemp, flax, wool, cotton, or the down of the brake, and is lined with hair and soft materials; the eggs are 4 or 5, $\frac{5}{8}$ by $\frac{1}{2}$ inch, light dull bluish white, with numerous dots and marks of dull reddish brown; only one brood is raised in New England, which are carefully fed and protected, the parents using the most ingenious devices to draw away intruders. The cow bird (see Troopial), *molothrus pecoris* (Swains.), often selects the nest of the summer yellow bird in which to deposit one of its parasitic eggs; this the latter probably never hatches out, and gets rid of in the following manner, apparently exercising reasoning powers: as it cannot eject the large strange egg, it picks a hole in it, and buries it at the bottom of the nest, placing a new floor over it; it sometimes buries its own eggs with that of the cow bird, and lays others for a new brood; if by chance the cow bird visit the second nest, it buries the eggs a second time, giving rise to the 3-storied nests occasionally found by egg hunters; she sacrifices her own eggs rather than hatch out a stranger which instinct tells her will destroy her young, and impose a heavy burden on herself.

YELLOW-EYED GRASS, the common name of a species of the genus *xyris*, composed of rush-like plants, with bright yellow flowers produced from the summit of a naked stem (scape), conspicuous in sandy bogs in July and August. The yellow-eyed grass (*X. bulbosa*, Kunth) has a bulbous root; grassy, equitant, narrow, linear, twisted leaves; an erect, 2-edged, twisted scape; roundish, acute heads, supporting a number of small yellow flowers projecting from between the scales; the petals 3, ovate, crenate, hairy within; stamens 6, 3 of which only are fertile, and the style 3-cleft; pod oblong, free, 1-celled, 3-valved, many-seeded. Another species with pretty large petals (*X. Caroliniana*, Walter) occurs near the sea from Rhode Island southward. The *X. fimbriata* (Elliott), a plant 2 feet high, the divisions of its calyx conspicuously fringed on the wing-margined keel, and plumose at the summit, is found in the pine barrens of New Jersey and southward. The species are mostly southern, Dr. Chapman describing 18 found in the southern United States.

YELLOW FEVER, an acute febrile disease, of comparatively recent date, having been first distinctly noticed about the middle of the 17th century. Its English and French names of yellow fever and *fièvre jaune* are due to the deep yellow or orange hue which the surface commonly assumes in the course of the disease; the Spaniards, from another of its characteristic symptoms, term it *vomito negro* and *vomito prieto;* the French, from the suddenness of the attack of pain in the back, have sometimes called it *coup de barre;* while scientifically it is spoken of by Cullen as *typhus icterodes*, and by Copland as hæmagastric pestilence. The disease is confined within narrow geographical limits. It is endemic on certain parts of the African coast, in the West India islands, and in tropical America; it frequently makes its appearance in various cities of the southern part of the United States, in New Orleans, Mobile, Pensacola, and Charleston; a few years ago it raged violently at Norfolk, Va. New York, which in the latter part of the last and the earlier part of the present century had been repeatedly visited by it, has now escaped any epidemic attack for 40 years, it having last appeared there in 1822. In Europe, it has prevailed at Leghorn in Italy, and has visited several of the cities on the sea coast of Spain and Portugal. The disease is confined almost wholly to towns situated on the sea coast or on the banks of navigable rivers. A certain degree of heat seems to be necessary to its existence, the first frost putting an end to it. Why it should prevail extensively in America and tropical Africa, and be unknown in the Indian ocean and China—why it should be endemic in Vera Cruz and Havana, and never be seen in Calcutta or Bombay—can only be answered satisfactorily when we are more thoroughly acquainted with the etiology of the disease.—As with other fevers, yellow fever begins commonly with a feeling of chilliness, though there is rarely well defined rigor; this is succeeded by fever, with pain in the back, head, and limbs. The pain in the head is frontal, and often exceedingly severe; it may be attended with some confusion of thought, and occasionally with violent delirium. The pains in the back and limbs are sometimes very severe. The stomach is early affected, nausea commonly present at the beginning, and vomiting either comes on spontaneously, or is provoked by any thing taken into the stomach. The matters vomited consist of the contents of the stomach, of bile, or of a thin colored fluid. There is tenderness of the epigastrium; the patient complains of heat and burning at the pit of the stomach, with a feeling of weight and oppression. Much anxiety and restlessness form striking features of the disease; the face is flushed and swollen, and the eye peculiar, being red, suffused, muddy, and sensitive to light. The breathing is sometimes hurried and irregular, sometimes slow and embarrassed. The skin is commonly hot, dry, and harsh. The yellowness from which the disease derives its name first tinges the eye, then spreads to the forehead, neck, and breast, and last to the extremities. The color varies from an orange to a bronze, and sometimes in the last stage approaches a dark mahogany. Its presence is not invariable, some cases running their course without exhibiting it. The tongue at first is generally moist and white, becoming gradually red at the point and edges. The pulse is not affected in a degree corresponding to the gravity of the disease; it is rarely over 100, and is apt to be full and bounding. The restlessness of the patient is often remarkable; he is constantly changing his position, while the expression of the countenance is gloomy and anxious, or sometimes fierce and threatening. Such are the symptoms which mark the first stage of the disease. Dr. S. H. Dickson, of Charleston, S. C., says he has seen it pass over in 4 hours, while it sometimes lasts 60 or 70; its average duration is from 36 to 48 hours. The second stage is marked by an abatement, more or less complete, of all the unpleasant symptoms. The skin becomes moister and cooler, the pain in the head and limbs is relieved, the stomach is less irritable, the pulse calmer, the expression of the countenance more natural. The yellowness of the skin, however, is now apt to appear if it has not before shown itself, or to become more diffused and deeper in tint. This stage of remission generally lasts from 12 to 18 hours, though it may be prolonged to 24 or 36; sometimes it is not well marked, or is altogether absent. The third stage is characterized by prostration; the pulse becomes more frequent and feebler, and the skin darker; the tongue may remain large and moist, or become dry and brown, or smooth, red, fissured, and bleeding. The irritability of the stomach returns or is increased. The vomiting is often incessant. At first it may consist of a colorless, ropy, acid liquor; soon, in bad cases, it begins to contain flakes of a dark color, increasing until the matters vomited look like a mixture of soot, or coffee grounds and water; this is the black vomit. The quantity thrown up is often very great, and it comes up with little effort. Sometimes diarrhœa now supervenes, the stools resembling the matters ejected from the stomach. With the appearance of these symptoms the patient becomes more and more prostrate; the skin is cold and clammy, the pulse very feeble, frequent, or intermittent, the breathing irregular and labored; the tongue is black and tremulous; there is low muttering delirium, and death closes the scene. In some cases suppression of urine occurs; in others, it has been noted to be albuminous. Such is the ordinary course of the severer cases of the disease, but sometimes the cases are exceedingly mild. Speaking of such cases as they were observed at Gibraltar, M. Louis says: "Most frequently there was at the beginning headache, chills followed by moderate heat of skin, some pain in the limbs, and redness of the face and eyes. The epigastric pains were infrequent; the same was the case with the vomiting, which seldom occurred spontaneously, and never offered any brownish tinge in the matters vomited. The heat and thirst were trifling; the strength so little lessened that the patients did not keep their bed, or kept it for a short time, for half a day; this was called "going through the disease on foot." At Gibraltar these cases would appear from the account of Louis to have done well; but Dr. Dickson speaks "of what Rush used to call the 'walk-about cases,' in which the patients scarcely feel or acknowledge they are ill; refuse to lie down, and are unwilling to be prescribed for; but with hardly an exception sink and die promptly." The duration of the disease varies; bad cases sometimes sink and die in a few hours, but this is rare; ordinarily, where death occurs, it takes place in from 3 to 9 days from the date of the attack, though patients sometimes sink at a much later period. The convalescence is slow and protracted.—Pathological anatomy has not hitherto added much to our knowledge of yellow fever. The most constant alteration found is the condition of the blood; this is unusually dark-colored and fluid, seeming sometimes to have entirely lost its coagulability. The surface of the body is usually more or less yellow after death, even in cases which did not present any tinge of that color during life. The liver presents a pale yellow or fawn color (*café au lait*), and is more or less fatty. Dr. Dickson, however, says that he has repeatedly seen it of natural color and consistence. The stomach is apt to be reddened, and its mucous membrane more or less softened; other alterations are not constant.—The mortality of yellow fever varies greatly in different epidemics. At Gibraltar, in 1804, nearly the whole of the population was attacked, and the deaths amounted to 33⅓ per cent.; sometimes it has reached as high as 75 per cent.; in Charleston, according to Dr. Dickson, in 1854, it amounted to only 3 per cent. of those attacked, and he thinks the average mortality in that city for a term of years has not been greater than from 10 to 13 per cent. In individual cases the prognosis is equally variable. National habits and mode of life, according to Dr. Dickson, have a decided influence. "The Irish, Germans, and Scotch afford the worst cases; Spaniards, Italians, and Frenchmen are apt to recover; midway stands the Englishman, the northerner, and the mountaineer, or inhabitant of our interior country. Generally speaking, the more recently a stranger has arrived, the more severe his attack. Among the young children assailed, the ravages of the pestilence are very great everywhere." In individual cases the prognostic must be exceedingly guarded; cases apparently mild often suddenly take on an unfavorable aspect, and a temporary and delusive improvement gives way to the approach of death. The appearance of black vomit, hæmorrhage from the bowels, petechiæ, and suppression of urine are looked upon as fatal symptoms; and yet instances of recovery have occasionally been noticed after their occurrence.—The causes of yellow fever are obscure. Its limitation to certain climates and localities, and the necessity of a high temperature to its existence, have already been alluded to. The question of its contagiousness or non-contagiousness has given rise to long and embittered controversy, nor can it yet be regarded as wholly settled. In one point it strongly resembles the strictly contagious diseases: it occurs but once in the same individual. There are exceptions to the rule, but so there are, and probably to the same degree, in regard to small pox and scarlet fever. It follows to a certain extent the great routes of commercial intercourse, and in places where it is not endemic it has been in almost every instance traced to some vessel arriving from an infected port. Again, though contrary to the experience of the majority of observers, there appear to be a number of well authenticated instances in which patients who have taken the disease during a visit to an infected locality, have, on their return to their homes in a perfectly healthy situation, communicated it to those who have nursed and attended on them. (Dr. Fenner, "Transactions of the American Medical Association," 1854.) But commonly the disease is propagated not by personal contagion, but by means of an infected atmosphere. In 1822, the last period at which yellow fever prevailed epidemically in New York, commencing at the foot of Rector street, the pestilence gradually spread over a great part of the three lower wards of the city. Those who went within the infected district were liable to an attack; but on being removed to a healthy locality, they did not communicate it to those in daily and hourly attendance on them. The exceedingly local confinement of yellow fever is one of the most remarkable facts in its history. In the British West India squadron, occasionally consisting of 20 or 30 vessels, the disease has been repeatedly confined to one, two, or three vessels; these have sometimes suffered enormously, while others of the squadron exposed to the same general influences have escaped unscathed. Similar facts occurring on land are not infrequent. "In September two undoubted cases of yellow fever occurred in St. James's barracks (Trinidad). The men were camped out for two months, and the barracks were meantime thoroughly cleaned and whitewashed. No sooner were they reoccupied than fresh cases of fever occurred. Again were the troops put under canvas, and with good effect. Although several cases occurred subsequently, they could all be clearly traced to the barracks. The disease was clearly of a local origin." ("British and Foreign Medico-Chirurgical Review," Jan. 1862.)—Of the treatment of yellow fever but little can be said that is satisfactory; the variety and conflicting nature of the remedies that have been advised are presumptive proof that, so far, no mode of treatment has been found to be of uniform and undeniable benefit. The confinement of the patient to bed, and the enforcement of hygienic regulations; the use of mild, saline cathartics to act upon the bowels when, as is almost invariably the case, they are constipated; the use of ice internally, and of counter irritation over the epigastrium, to counteract or moderate the irritation of the stomach; and the support of the system (when it is borne) by unirritating nutriment, and when necessary by stimulants, comprise the means which at present are most to be relied on.—Peteler of Staten island and Strebe of London have invented apparatus to reduce the temperature in ships below the freezing point, and thus destroy the contagion of yellow fever.

YELLOW-HAMMER (*emberiza citrinella*, Linn.), a very common European bird of the bunting family. It is 7⅛ inches long and 11 in extent of wings; in the male the head and throat are bright yellow, on the crown the feathers tipped with black; breast brownish red; back and wings bright red, the centre of each feather brownish black; body rather stout. It is very common throughout Europe in the wooded districts, familiar, and a permanent resident; in winter it is seen with sparrows, finches, &c., in the fields and about hedges, coming into farm yards when the ground is covered with snow; the food consists of the seeds of grains and grasses; the nest is on or near the ground, and the eggs 4 or 5, ⅚ by ⅔ of an inch, purplish white with streaks and dots of black. When deprived of its eggs, its doleful notes in some parts of Scotland have been interpreted as "De'il, de'il, de'il take ye;" hence its name of "devil bird."

YELLOW-LEGS (*gambetta flavipes*, Bonap.), a North American wading bird of the tattler family. It is about 10½ inches long and 19¾ in extent of wings, considerably smaller than the tell-tale tattler (see Tattler), which it resembles in colors; the bill is 1½ inches, straight and slender; wings long and pointed, tail short, legs long with lower half of tibiæ naked. The general color is ashy above, with many large arrow-heads and spots of brownish black edged with ashy white; rump and upper tail coverts white, the latter barred with ashy brown; lower parts white, with numerous lines on the neck and arrow-heads on the sides dark ashy brown; bill greenish black, and legs yellow. It is generally distributed over eastern North America, and is one of the most abundant of the group on the Atlantic slope from Maine to Florida, chiefly in the interior; it migrates to Mexico and Central America in winter. It is usually seen in small flocks wading in search of small fry, shrimps, worms, and aquatic insects, both in salt and fresh water; in dry weather the flocks are found on the uplands, feeding on grasshoppers and other insects; they generally run for some distance before flying, vibrating the body back and forth, examining the object of alarm, and uttering loud notes; during flight the long yellow legs are stretched out behind; the nest is made among the grass on the edges of rivers and ponds; in autumn they get very fat, and are good eating.

YELLOW RIVER. See Hoang-ho.

YELLOW SEA, a large sea on the N. E. coast of China, lying between the peninsula of Corea on the E., the Chinese provinces of Kiang-su, Shan-tung, and Chi-li on the W., and Leao-tong on the N. In the N. W. it terminates in the gulfs of Leao-tong and Pe-che-li; the latter is important from its reception of the waters of numerous large rivers, among which is the Pei-ho. The two gulfs are nearly separated from the remainder of the Yellow sea by the Shan-tung promontory, and the long narrow peninsula known as the "Regent's Sword." On the E. coast are numerous groups of islets, forming the Corean archipelago. The sea derives its name from the turbidness of its waters, which flow over a bottom of yellow alluvium, easily stirred up by vessels passing over it. Its length is about 620 m., and its greatest breadth about 400 m. The Hoang-ho, one of the largest rivers of Asia, discharges its waters into this sea, bringing down in its broad and rapid current an immense quantity of detritus. The Yang-tse-kiang flows into the Pacific near its entrance.

YELLOW SPRINGS, a village of Miami township, Greene co., Ohio, on the Little Miami railroad, 45 m. from Columbus and 75 m. from Cincinnati; pop. in 1860, 1,319. It has 3 churches (Christian, Methodist, and Presbyterian), several stores, &c., and a mineral spring of considerable note, which discharges, from a crevice in a limestock rock, above 100 gallons of water per minute. There are also valuable limestone quarries in the vicinity. The place is principally of note, however, as the site of Antioch college. (See Antioch College.)

YELLOWSTONE, a river of Dacotah territory, the largest tributary of the Missouri, though not the longest. It rises in Sublette's lake, near the source of the Madison fork of the Missouri, in about lat. 43° 40′ N., long. 110° W., flows first N. E., then E., next N. E., and finally nearly N., and falls into the Missouri in lat. 48° 5′ N. and long. 104° W. Its principal affluents, all of them entering it on the right bank, are Big Horn, Tongue, and Powder rivers. Its length is said to be about 1,000 m. It is navigable for 700 or 800 m., and toward its head waters gold has recently been found in considerable quantities.

YELLOW-THROAT (*trichas* [*geothlypis*] *Marilandica*, Bonap.), a very common North American warbler. It is 5½ inches long and 7¼ in extent of wings; the color is olive-green above, tinged with brown on the crown; chin, throat, breast, and under tail coverts, bright yellow; abdomen dull whitish buff; broad black band on forehead, bordered behind by hoary white; in winter, as also in the females, there is no black band on the forehead; the wings are short and rounded, with the 4th quill the longest, the tail considerably graduated, and the legs long and yellow. It is found throughout North America, from the Atlantic to the Pacific, but is most abundant in the middle states, especially in Maryland, preferring the neighborhood of swamps. The song, though not very musical, is pleasing, and from its frequent repetition forces itself on one's notice, as it hops from twig to twig in search of insects, caterpillars, and spiders, uttering its "whittititee." The nest is made on the ground, even partly sunk in it, and is occasionally covered over at the top, whence the common name of "oven bird;" it is constructed externally of leaves and grass, and lined with hair; the eggs are 4 to 6, ⅝ by ½ inch, white with light brown specks, and are laid about the middle of May. Its nest is often selected by the cow bird (*molothrus pecoris*, Swains.) as the place of deposit for one of its parasitic eggs (see Troopial), which is generally hatched out at the expense of its own offspring, this warbler not possessing the remarkable instinct of another of the family mentioned under Yellow Bird; in some districts it raises 2 broods in a season.

YELVERTON, Barry. See Avonmore.

YEMEN, or El Yemen ("the fortunate," or "the country of the right hand"), one of the provinces or kingdoms of Arabia, situated in the S. W. part of that peninsula, bounded N. by El Hejaz and Nedjed, E. by Hadramaut and the great Arabian desert, S. by the gulf of Aden, and W. by the Red sea. Even with its dependent wadys or valleys in the desert, it is the smallest, though at the same time the most fertile of the Arabian states; and it is substantially the same country anciently called Arabia Felix, or the Happy. Through its entire length a chain of mountains, a continuation of the coast range of El Hejaz, rises at a distance of 10 to 30 m. from the coast, dividing it into a *Tehama* or lowland and an elevated mountainous region. A large portion of the Tehama, being irrigated by mountain streams, is abundantly fertile, but the rest is sandy and barren. The mountain chain expands into a fertile table land at the height of 4,000 feet, while some of its summits, as Saber and Kusumma, rise to the height of nearly 8,000 feet. The valleys enclosed by these mountains are unsurpassed in fertility. The whole of Yemen is comprised in Schouw's "region of balsamic trees." The vegetation of the Tehama is tropical, and that of the valleys and table lands semi-tropical. The trees yielding gums and balsamic resins are more numerous here than in any other country on the globe. Even the slopes of the loftier mountains are covered with luxurious forests, many of the trees yielding precious gums. The coffee of Mocha has a high reputation. Sana, on the table land, is the capital of Yemen. Mocha, Aboo Arish or Gasim, Hodeida, and Shehr are the principal seaports. Aden, on the gulf of the same name, formerly a seaport of Yemen, now belongs to Great Britain. Damar, Taas, Loheia, Beit-el-Fakih, and Zebeed are the other considerable towns. There are few good harbors on the coast, in consequence of the coral reefs which line it; but wherever there is an opening in these there is always safe anchorage within. The exports are principally senna, gums, gum resins, coffee, wax, ivory, and goat skin morocco, with some grain; the imports are cottons, silks, iron, copper, lead, tobacco, rice, sugar, and timber.—The political condition of the country is, as it has been for centuries, unsettled. The imam of Sana, the titular monarch of the country, can only control Yemen proper, which does not include more than ⅔ of the territory of the state. The remainder is governed by several independent sheiks. There are abundant evidences of the former wealth and commercial superiority of Yemen. Its caravans once conducted the traffic between India and the west, and over all its mountains and table lands are the ruins of towns and castles, and elaborate inscriptions. The inhabitants now speak various dialects of Arabic, some of them little known abroad. There are two great universities under the direction of Mohammedan mollahs, one at Zebeed for Soonnees, the other at Damar for the Zeidee, who are the prevailing sect in Yemen.

YENISEI, or Jenisei, one of the great rivers of Siberia, traversing the central province of Yeniseisk from S. to N., and draining a basin 784,530 square miles in extent. It rises on the southern slope of the Altai range, in a small lake in the eastern part of Soongaria, and after running W. for a considerable distance crosses the Altai, and thence pursues a course nearly due N. to a wide estuary called the Yenisei gulf, an arm of the sea of Kara, in lat. 72° 30′ N., long. 85° E. It is about 2,500 m. in length, and receives on its right bank, beside many smaller tributaries, the Upper Tunguska and its affluent the Uda, the Podkamennaya Tunguska, the Lower Tunguska, and the Kureyka, and on its left bank the Yelagui and some smaller streams. The considerable towns of Minusinsk, Abakansk, Krasnoyarsk, Yeniseisk, and Turukhansk are on its banks. It is navigable for large ships to Turukhansk, in lat. 61° N., long. 90° 30′ E.

YENISEISK, or Jeniseisk, a government of E. Siberia, bounded N. by the Arctic ocean, E. by Yakootsk and Irkootsk, S. by the Chinese empire, and W. by Tomsk, Tobolsk, and the gulf of Obi; area, about 971,295 sq. m.; pop. in 1858, 303,266. Capital, Krasnoyarsk. The sea coast is deeply indented, and projects into the Arctic ocean considerably beyond the shores of the adjoining governments, terminating in Cape Severo-vostotchnoi, or the North-East cape, the northernmost point of Asia, in lat. 78° 20′ N., long. 100° E. From the Altai mountains in the S., which separate the province from China, the surface slopes gradually toward the N. Beside the Yenisei and its tributaries, the only rivers of importance are the Anabara and Khatanga in the N. E., which flow directly into the Arctic ocean, and the Taz, which enters the gulf of Obi through the estuary or bay of Tazovsk. There are several lakes, the largest of which is Piasini, situated in the N. part of the province. Some parts of the S. are well wooded. Iron ore and salt are found in large quantities. The climate varies a great deal in different parts of the province, and grain can only be produced in the valleys of the S. In the N. numbers of reindeer feed upon lichens; and about the centre of the government there is good pasture land, upon which large herds of cattle are kept. Game is abundant, more particularly the fur-bearing animals, and many of the inhabitants live by hunting. The population is composed of different aboriginal tribes, and some Cossacks and Russians, the latter being chiefly convicts, who arrive at the rate of about 3,500 per annum.—Yeniseisk, a town of the above government, is situated on the left bank of the Yenisei, 270 m. E. N. E. from Tomsk; pop. about 6,000. It has several churches, a monastery, and a nunnery, and is surrounded by an old rampart. An annual fair is held which lasts 3 weeks, and a very considerable trade is carried on, more particularly in furs. The town was founded in 1618.

YENITCHER. See Larissa.

YEOMEN OF THE GUARD. See Beef-Eaters.

YESSO, an island of Japan, lying N. of Niphon, from which it is separated by the strait of Sangar, and S. of Saghalien, from which it is separated by the strait of La Pérouse, and having the Koorile islands on the N. W., from the southernmost of which, Kunashir, it is separated by the strait of Yesso, 12 m. wide. It is nearly triangular in form, with the apex directed toward the S. W., and extends from lat. 41° to 46° N., and from long. 140° to 147° E.; area estimated at 62,000 sq. m. It is thinly populated and very imperfectly known. In the N. it is level and tolerably fertile, but the greater part of the surface is mountainous, some of its peaks, of which Mount Pallas is the highest, being covered with perpetual snow; there are several volcanoes. The climate is exceedingly severe and unfavorable to agriculture, especially on the W. side, where the ground is covered with snow from November to April. There are three large bays, Strogonoff on the W. side, and Volcano and Edermo on the S. Several rivers, the most considerable of which is the Isikari, make their way from the mountains to the sea. The inhabitants are Ainus and Japanese, the former living by woodcutting, the chase, and fishing. Gold, silver, lead, and coal are produced, the last two in ample quantities. Wheat, rice, hemp, tobacco, and apples are raised.—The island is divided into two provinces: that of Matsmai in the S., having the fortified city of Matsmai, pop. 50,000, capital of the island, situated near its S. W. extremity, with an excellent harbor, and Hakodadi, one of the cities opened to foreign trade by the treaty made with Com. Perry at Kanagawa, March 31, 1854; and that of Ainokhuni in the N., having the city of Atkis, with a fort garrisoned by Japanese soldiers, and a harbor, in the N. E. part of the island.—Yesso was first invaded by the Japanese in 658, and was more completely subdued in 1458, when a Japanese chieftain named Fakeda Noboe Firoe gained control of the island, and transmitted it to his descendants as a principality less dependent on the government of Japan than other parts of the empire. It was visited in 1620 by De Angelis, in 1643 by Vries, in 1787 by La Pérouse, in 1805 by Krusenstern, and Golownin was imprisoned there in 1811–'12.

YEW (Celtic, *iw*), the name of evergreen low trees and shrubs, with linear entire leaves, indigenous to Europe and North America. The yew represents the natural order *taxaceæ* of Lindley, being gymnogens with repeatedly branched continuous stems, simple leaves, solitary fertile flowers, the anthers 2-celled, opening longitudinally, the membrane next to the nucleus enclosed. The yews resemble the conifers in general aspect, and are considered by some botanists as constituting merely a suborder of the pine family; but they widely differ in their fruits not being collected in cones, each ovule growing singly and unprotected by hardened scales. Their leaves are in some instances also fork-veined and expanded. They are however resinous like the coniferæ, their ligneous tissue marked with circular dots, their timber valuable and unsurpassed for durability and elasticity. The order contains several distinct genera found in mild climates or in elevated situations in the tropics, most of them belonging to Asia, others to New Zealand, the Cape of Good Hope, Europe, and America. The common yew (*taxus baccata*, Linn.) has a short and straight trunk, sending out at the height of 3 or 4 feet numerous spreading branches, the outline of the top being pointed, but becoming more open and ragged when old or in decay. The trunk and branches are channelled lengthwise and rough from the remains of the smaller shoots which have fallen off; the bark is smooth, thin, brown, and peels off in scales; the leaves scattered, nearly sessile, arranged in two lateral rows, linear, entire, slightly revolute, an inch long, dark green, smooth and shining above, but paler beneath, with a prominent midrib, and terminating in a small point. The flowers are axillary, solitary, each from a scaly imbricated bud; the barren ones are light brown, with 5 to 10 stamens filled with abundant white pollen; the fertile flowers green, and made up of little bracts so as to resemble an acorn. The fruit is a small scarlet berry, open at the top and enclosing a brown oval nut which has an agreeable-flavored kernel. When gathered for planting, the berry should be immediately sown, the young tree appearing in the next spring, though sometimes not vegetating until the second year. The tree is of slow growth, rising upward for 100 years, after which it remains comparatively stationary, making only lateral increase, and continuing to survive many centuries. The species is indigenous to most parts of Europe, ranging from lat. 58° N. to the Mediterranean sea. It is found to prefer solitude on the north sides of hills, but among deciduous trees, and loving a moist, clayey, loamy, or calcareous soil, being unsocial in its habits, and seldom seen in patches or groups.—The use of the yew for making bows was familiar to the earliest Greek and Roman authors, as well as its supposed poisonous qualities, but these latter properties in later times are matters of much doubt. In Britain the yew considered as material for weapons is connected with its civil history, and in Switzerland the use of its timber was prohibited for any other purpose than bow making. The yews in the churchyards of England are of very great antiquity and extraordinary size, and supposed to mark out the sites of pagan and druidical temples which once occupied these sacred precincts.—The common yew is subject to distinct varieties, such as the Irish yew (*T. b. fastigiata*, Lindley), readily distinguished by its upright mode of growth, and deep green leaves, which are not distichously placed, but scattered and irregularly arranged along the branches; the berry also is oblong instead of roundish. The erect yew (*T. b. erecta*) is a seedling from the last and similar to it, but has 2-ranked leaves. The particolored yew (*T. b. variegata*, Loddige) has leaves variegated by whitish yellow. The yellow-fruited yew (*T. b. fructu luteo*) does not differ from the common except in the yellow color of the fruit, but this when borne abundantly produces a pleasing effect. Variations in the size of the foliage or in the drooping character of the spray are often noticeable.

These curious varieties are propagated by striking cuttings of the new wood under a bell glass.—The North American yew (*T. b.* var. *Canadensis*, Gray) is in some portions of this country called the ground hemlock. It is a low, semi-prostrate bush, and occurs on moist banks and hills, being common northward. Its rich dark green foliage and elegant scarlet fruits entitle it to much consideration as an ornamental shrub in artificial planting.—The prevailing quality of the yew is narcotic, and medically exhibited its leaves have been substituted for digitalis; its berries have a mucilaginous pulp, and are eaten with impunity.

YEZDEGIRD, the name of a number of Persian kings of the dynasty of the Sassanidæ. I. reigned from 399 to 419, and died of a fall from his horse. He tolerated the Christians, and excited the fears of the magi for the safety of the national religion. II. reigned from 439 to 457, was a fanatical adherent to the doctrine of Zoroaster, and imposed the fire worship by force of arms on the people of Armenia and Albania. III. reigned from 632 to 652, resisted the caliph Omar, who desired to make him a Mohammedan, lost two battles, and was killed by the Turks whom he had engaged as allies. The dynasty ends with him.

YEZIDIS, a Koordish people, living chiefly in the mountainous region about Mosul, Asiatic Turkey, supposed to be about 200,000 in number; according to the Turkish census of 1856, the district of Beshiri, in the province of Diarbekir, contains 3,882 of them, and two other districts of the same province 237. They are also scattered in Syria, and some are found in the Russian province of Erivan. Those of them who occupy the Sindjar mountains in the pashalic of Bagdad are entirely independent, and can bring into the field a force of 6,000 infantry and 3,000 horsemen. They all recognize the authority of a sheik who lives at the grave of Adi, the reformer of their religion, which was established by Yezid. They all fanatically hate Mohammedanism. For an account of their tenets, see Devil.

YOLO, a central co. of California, bounded E. by the Sacramento river, S. W. by the Putah, and W. by the Coast range; area, 1,500 sq. m.; pop. in 1860, 4,716. The E. part is generally level and the soil productive, and in the valley of the Sacramento the soil is very fertile. The productions in 1858 were 126,000 bushels of wheat, 245,400 of barley, 2,000 of oats, and 60,000 lbs. of wool; and there were 155,425 grape vines. Capital, Cacheville.

YONGE, Charlotte Mary, an English authoress, born at Otterbourne, Hampshire, about 1832. Her father was an officer of the 52d foot, and her elder brother, Julian Bargas Yonge (born Jan. 31, 1830), is now an officer of the rifle brigade. She has written a number of works of fiction, which have passed through several editions in England, and many of them have enjoyed a large circulation in the United States. Among these are: "Henrietta's Wish, or Domineering," "The Heir of Redclyffe," "Dynevor Terrace," "The Daisy Chain," "The Young Stepmother," "Hopes and Fears, or Scenes from the Life of a Spinster," "The Lances of Lynwood," "The Little Duke," &c. These works all set forth in a practical and effective manner the general views of the high church party in the church of England. From the profits of "The Daisy Chain" Miss Yonge devoted £2,000 to building a missionary college at Auckland, New Zealand; and from those of "The Heir of Redclyffe" she fitted out a missionary schooner for the use of Bishop Selwyn of New Zealand. She has contributed much anonymously to periodicals, and has written several popular school books, "Landmarks of History" (3 vols.), "Kings of Europe," &c. She is now (Nov. 1862) about to publish "Christian Names, their Origin and Derivation."

YONGH, Vanayl de. See Saint Elme.

YONNE, a N. E. department of France, forming part of the old province of Burgundy; area, 2,781 sq. m.; pop. in 1862, 370,305. It takes its name from the river Yonne (anc. *Icaunus*), which rises in the E. part of Nièvre, flows northward through the centre of the department of Yonne, and joins the Seine at Montereau in the S. part of the department of Seine-et-Marne, after a course of 155 m. It is navigable as high as Auxerre, the capital of Yonne. The department is also watered by the Cure, Armançon, and Vannes, affluents of this river. The surface is undulating and the soil of excellent quality, producing fine crops of grain, pasturage, and grapes. A great deal of good wine is made. Iron, lithographic stones, and ochre are the principal mineral products, and woollen and cotton goods and beetroot sugar the most important manufactures. The railway from Paris to Lyons traverses the department, and there are two canals branching from the Yonne, one extending to the Seine and the other to the Loire.

YORK. I. A S. W. co. of Maine, bounded S. by the Atlantic ocean, and W. and S. W. by New Hampshire, from which it is separated by Salmon Falls and Piscataqua rivers, and drained by the Saco and other streams; area, 818 sq. m.; pop. in 1860, 62,107. The surface is uneven; the soil of the sea coast is rocky and sterile, and that of the interior fertile. The productions in 1850 were 227,046 bushels of Indian corn, 511,773 of potatoes, 1,058,704 lbs. of butter, 75,571 of wool, and 78,559 tons of hay. There were 21 grist mills, 62 saw and planing mills, 4 cotton and 11 woollen factories, 10 shingle factories, 14 ship yards, 31 tanneries, 4 newspaper offices, 134 churches, and 20,099 pupils attending public schools. The county is intersected by the Portland, Saco, and Portsmouth, and the York and Cumberland railroads. Capital, Alfred. II. A S. E. co. of Penn., bordering on Md., and bounded N. E. by the Susquehanna river; area, 864 sq. m.; pop. in 1860, 68,200. The surface is generally hilly, diversified by mountains in the W. part, and the soil is highly fertile. The productions in 1850 were 578,828 bushels of wheat, 707,151 of Indian corn, 582,817 of oats, 124,867 of potatoes, 1,082,579 lbs. of butter, 418,555 of tobacco, and 50,760 tons of hay. There were 115 grist mills, 40 saw mills, 2 iron forges, 9 founderies, 1 cotton and 8 woollen factories, 45 distilleries, 37 tanneries, 7 newspaper offices, 98 churches, and 10,582 pupils attending public schools. There are extensive quarries of limestone, slate, and sandstone. The county is intersected by the northern central railroad and its Hanover and Wrightsville branches, and the Susquehanna canal passes along the E. border. Capital, York. III. A S. E. co. of Va., forming part of the peninsula between York and James rivers, and bounded E. by York river and Chesapeake bay; area, 150 sq. m.; pop. in 1860, 4,946, of whom 1,625 were slaves. The surface is generally undulating, and the soil is fertile. The productions in 1850 were 148,335 bushels of Indian corn, 27,650 of wheat, 25,951 of oats, and 14,113 lbs. of butter. The value of real estate in 1856 was $860,945, an increase of 33 per cent. since 1850. Capital, Yorktown. IV. A N. district of S. C., bordering on N. C., bounded E. by the Catawba river and W. by Broad river; area, 800 sq. m.; pop. in 1860, 21,503, of whom 9,984 were slaves. The surface is hilly or mountainous, and the soil is moderately fertile. The productions in 1850 were 64,755 bushels of wheat, 690,447 of Indian corn, 106,315 of oats, 39,536 of sweet potatoes, and 9,986 bales of cotton. There were 10 grist mills, 3 saw mills, 5 tanneries, 1 newspaper office, 26 churches, and 168 pupils attending public schools. Iron ore is very abundant, and gold, manganese, and limestone are found. The county is intersected by the Charlotte and South Carolina and the King's Mountain railroads. Capital, Yorkville.

YORK, a S. central co. of Upper Canada, bounded on the S. by Lake Ontario; area, 808 sq. m.; pop. in 1861, 59,339. It is drained by the Humber, Rouge, and Don rivers, and traversed by the Grand Trunk railway. The Toronto and Collingwood and Toronto and Goderich lines of railway also commence in the county, and the former nearly bisects it. Capital, Toronto.

YORK, a town and the seat of justice of York co., Penn., pleasantly situated on Codorus creek, 28 m. by railroad S. S. E. from Harrisburg; pop. in 1850, 6,863; in 1860, 8,605. It is one of the oldest towns in the state. The court house is a brick edifice, with granite front, resembling one of the Grecian orders of architecture. There are 2 banks with a capital of $607,625, a private banking house, 4 iron founderies, 4 machine shops, a steam flouring mill, a sash and blind factory, a planing mill, a manufactory of agricultural implements, 2 breweries, 4 tanneries, 4 newspaper offices, and 16 churches, viz.: 1 Baptist, 1 Episcopal, 1 Evangelical Association, 1 Friends', 4 Lutheran, 1 German Reformed, 2 Methodist, 1 Moravian, 1 Presbyterian, 2 Roman Catholic, and 1 United Brethren. The northern central railroad connects this place with Harrisburg and Baltimore, and the York and Wrightsville railroad with Lancaster.—The continental congress held its sessions here in 1777, when Philadelphia was occupied by the British army.

YORK, a city and the capital of Yorkshire, Eng., situated upon both sides of the river Ouse, at its junction with the Foss, in lat. 53° 37′ N., long. 1° 4′ W., 191 m. N. from London, and 58 m. E. N. E. from Manchester; pop. in 1861, 40,377. The Ouse is here crossed by a handsome bridge, and there are several bridges across the Foss. York consists of the city proper and suburbs, the latter of which lie mostly upon the opposite side of the Foss. The city is nearly 3 m. in circuit, and is enclosed by ancient walls, originally erected by the Romans, but restored by Edward II., and since repaired. It is entered by 4 principal gates, and the streets are generally narrow, but several have been improved and widened of late years. Many of the houses have a very antique appearance. York minster, or the cathedral, is the finest church in England. Its history begins in the 7th century, but the present edifice was commenced in 1171 and completed in 1472. It is built in the form of a cross, with a square tower rising from the intersection of the transepts and nave to the height of 235 feet, and 2 other towers, each 196 feet high, flanking the W. front, which is highly ornamented. The extreme length is 524 feet, and the breadth across the transepts 222 feet. The E. window is 78 feet high and 30 wide, and filled with stained glass representing some 200 historical events. An elaborate screen contains statues of all the kings of England from William I. to Henry VI.; and upon this screen is placed the organ, one of the finest in the kingdom. Many of the monuments in the interior of the cathedral were much injured, and some of them destroyed, in the time of the commonwealth. The cathedral has a peal of 12 bells, one of which weighs 11½ tons, and is the largest in Great Britain. The edifice has been twice nearly destroyed by fire: in 1829 by an incendiary lunatic, and in 1840 through the negligence of a workman. The archbishop's palace is situated on the N. side of the cathedral. It was built toward the close of the 12th century, and afterward repaired, and is now used as the library of the dean and chapter; and the residence of the archbishop is situated at Bishopthorpe, a little distance from the city. York possesses many other churches, numerous schools, an ancient Gothic guildhall and large mansion house, the valuable museum of the Yorkshire philosophical society, public baths, a castle occupied by the assize courts and the county prison, a large modern gaol, a merchants' hall, handsome assembly rooms, a concert room, theatre, lecture hall, numerous charitable institutions, and extensive cavalry barracks. The manufactures are not very important; and though the means of communication afforded both by water and railway are very extensive, the trade of the town is mostly local.—The archbishop of York is primate of England. His ecclesiastical province includes the dioceses of Carlisle, Chester, Durham, Manchester, Ripon, Soder and Man, and York. The last named comprises the county of York, except a portion which is in the diocese of Ripon, and is divided into the archdeaconries of York, East Riding, and Cleveland. The city returns two members to parliament.—In the year 70 the Romans made Eboracum the capital of the province of Maxima Cæsariensis. Under the Saxon heptarchy it was the capital of Northumbria, and afterward of Deira. The citizens joined the Scots and Danes against William the Conqueror, who after their defeat razed the city to the ground. It was partially rebuilt, but destroyed by fire in 1137. Between the years 1349 and 1604 it was 5 times severely ravaged by the plague. Fairfax captured it from the royalists in 1644, and James II., in 1688, for its opposition to the arbitrary measures of the crown, took away its charter.

YORK, a ducal title formerly conferred on the second sons of the kings of England. It was first borne, however, by **Edmund Plantagenet**, 5th son of Edward III., who was created duke of York Aug. 6, 1385, and died in 1402. He was the founder of the house of York in English history, the house of the white rose; while his elder brother John, 4th son of Edward III., created duke of Lancaster Nov. 13, 1362, was the founder of the rival house of the red rose; and their respective claims were urged for nearly half a century in the so called wars of the roses (1452–'94). The 1st duke of York was succeeded by his son **Edward**, who fell at Agincourt in 1415, and was succeeded by his nephew **Richard**, son of Anne Mortimer, who was grand daughter of Lionel duke of Clarence, 3d son of Edward III. It was by virtue of this descent from the duke of Clarence that the house alleged its superior right over that of Lancaster, which was descended from the 4th son of Edward III. (See **England**, vol. vii. p. 163.) The title was subsequently borne by Edward Plantagenet, afterward Edward IV.; by Richard Plantagenet, supposed to have been murdered in 1483 by his uncle Richard III.; by Henry Tudor, afterward Henry VIII.; by Charles Stuart, afterward Charles I.; by James Stuart, afterward James II.; and was conferred by the pretender, James III., on his second son Henry Benedict, known in history as Cardinal York, the last of the royal family of the Stuarts.—After the accession of the house of Hanover to the British throne, George I. created, July 5, 1716, his brother **Ernest Augustus**, prince bishop of Osnaburg, duke of **York and Albany**. He died in 1728, and **Edward Augustus**, the 2d son of Frederic, prince of Wales, received in 1760 the title, but died childless in 1767. Next, **Frederic**, 2d son of George III. (born Aug. 16, 1763, died Jan. 5, 1827), was created duke of York and Albany, Nov. 29, 1784. He had previously, Feb. 27, 1764, at the age of one year, received the dignity of prince bishop of Osnaburg, that bishopric being held alternately by a Catholic and a Protestant. Of this possession he administered the actual government from 1782 till 1802, when it was secularized and became a part of the kingdom of Hanover. He returned to England in 1787 from the continent, where he had gone to study the military art, especially under Frederic the Great, and took his seat in the house of lords. In 1789 he fought with pistols on Wimbledon common a duel with Col. Lennox, afterward duke of Richmond, who challenged him because he refused to retract or explain words uttered in the house; the bullet of Col. Lennox grazed his hair, and he then fired in the air. In 1791 he went to Prussia again, to serve with the Prussian army in event of a war with Russia, and on Dec. 29, 1791, married Frederica (died Aug. 6, 1820), eldest daughter of Frederic William II., from whom he separated a few years afterward. When the war of England with the French republic broke out in 1793, he was appointed to command a British corps in the Netherlands attached to the army of the prince of Saxe-Coburg. He took Valenciennes July 26, and began the siege of Dunkirk Aug. 22; but on Sept. 8 he was defeated by Houchard at Hondschoot and compelled to retreat behind the Meuse, and in 1794 he was obliged to retire to Westphalia, whence with the relics of his corps he returned to England in April, 1795, where in February previous he had been made field marshal. On April 5, 1798, he became commander-in-chief of the British army. In 1799 he commanded an expedition in Holland, and on Sept. 19 was defeated by Brune near Bergen, and on Oct. 6 near Alkmaar, where on Oct. 18 he signed a convention, by which the British agreed to surrender 8,000 prisoners of war and evacuate the territories of the republic. On Jan. 27, 1809, he was brought into most unenviable notoriety in consequence of a quarrel with Mrs. Mary Anne Clarke, his mistress, who revealed to Col. Wardle various corrupt transactions in connection with the army, in which the duke was believed to be implicated. Col. Wardle arraigned the duke in the house of commons, of which he was a member. A committee of investigation was appointed, before which Mrs. Clarke was repeatedly brought to testify, and the affair caused enormous scandal. It appeared that Mrs. Clarke had been in the habit of selling promotions in the army, pensions, &c., to a great extent, and that persons who paid her were afterward actually promoted or pensioned; but as the evidence did not absolutely fix upon the duke a share in the corruption, he was on March 20, 1809, acquitted by 278 votes against 196. The same day he resigned his office of commander-in-chief, to which, however, he was restored by the prince regent, May 15, 1811. In 1814 he was formally thanked by parliament for his excellent administration of the army. By the death of the princess Charlotte, Nov. 6, 1817, he became heir presumptive to the throne. In 1818 he was appointed keeper of the person of his insane father, with a salary of £10,000. His last speech in the house of lords was delivered in 1825 against Catholic emancipation. He had an allowance of £18,000 from parliament, beside £24,000 yearly indemnity for the bishopric of Osnaburg; but he died heavily in debt. A granite column surmounted by a bronze statue of the duke was erected in Carlton gardens by contribution of a day's pay from the officers of the British army in 1833.

YORK RIVER, a river of E. Virginia, formed by the union of the Mattapony and Pamunkey at West Point, at the S. E. extremity of King William co. The Mattapony rises in Spottsylvania co., and the Pamunkey is formed on the border of Caroline and Hanover cos. by the union of the North and South Anna rivers. The Mattapony and Pamunkey have each a S. E. course of about 75 or 80 m. The York pursues the same general direction, and falls into Chesapeake bay about 15 m. N. of the mouth of the James river. It is 40 m. long, and so broad from West Point downward as to present almost the appearance of a bay. At its mouth it is about 3 m. across, and in some places it is still wider. It is navigable to its head. Yorktown on the S. side of its mouth, and Gloucester immediately opposite, were important military points during the revolutionary war, and in the civil war of 1861–'2; and West Point was the scene of a defeat of the confederate forces by Gen. Franklin, May 7, 1862.

YORK VON WARTENBURG, Hans David Ludwig, count, a Prussian general, born in Königsberg, Sept. 26, 1759, died at Klein-Öls, Oct. 3, 1821. He entered the army in 1772, was cashiered in 1780, served in Netherlands India in 1783–'4, in 1786 was made a captain in the Prussian service, was a colonel in 1806, and was captured by the French along with Blücher at Radkow, Nov. 6, 1806; became a major-general in 1807, commanded the Prussian troops in Napoleon's Russian campaign, and concluded, Dec. 30, 1812, a convention with Diebitsch by which the Prussians abandoned the French; defeated Prince Eugene at Dannekow, April 5, 1813; fought at Lützen and Bautzen, took a decisive part in the battle on the Katzbach, Aug. 26, and defeated Bertrand at Wartenburg, Oct. 3, whence he received his title of count. During the battle of Leipsic, Oct. 16, he defeated Marmont at Möckern. On Feb. 11, 1814, at Montmirail, he saved the corps of Gen. Sacken, which had rashly engaged Napoleon, and on March 9 distinguished himself at Laon. After the peace of Paris he visited London, was richly pensioned, and made commanding general of Silesia and Posen. After the second peace of Paris he lived in retirement, and on May 5, 1821, was made a field marshal.

YORKE, Philip. See Hardwicke, Earl of.

YORKSHIRE, the largest county of England, bounded N. by Durham and the mouth of the river Tees, N. E. and E. by the North sea, S. by the estuary of the Humber and the counties of Lincoln, Nottingham, and Derby, S. W., W., and N. W. by Cheshire, Lancashire, and Westmoreland; area, 5,983 sq. m. It is divided into the North, East, and West Ridings (Anglo-Saxon, *trithing* or *thriding*, a third), each with its own government and officers, and there was formerly another small division called the "ainsty" of York, situated near the centre of the shire, which has been incorporated with the West Riding; pop. in 1861, of the North Riding, 244,804; East Riding, 240,359; West Riding, 1,507,511; city of York, 40,377; total, 2,033,051. The capital is York, and the other important towns are Sheffield, Leeds, Huddersfield, Barnsley, Hull, Whitby, Bradford, Scarborough, Halifax, Doncaster, Pontefract, Great Preston, Ripon, Tadcaster, Wakefield, Thirsk, &c. With the exception of the part lying between Bridlington bay and Spurn head, the coast of Yorkshire is high and bold, rising generally to an elevation between 70 and 150 feet, but in some places attaining an altitude of 300, and in one spot of 893 feet. Beside the harbors afforded by the rivers Tees and Humber, and their estuaries, the most important are those of Scarborough and Whitby. The greater part of the drainage of the county flows into the Humber by the river Ouse and its numerous tributaries; and of the remainder a small portion on the W. flows by the Ribble to the Irish channel, and on the N. and E. by the Tees and other streams directly to the North sea. An extensive valley extends from the N. part of the county to the river Humber at the S., and is enclosed upon the E. and W. sides by moorlands, which upon the E. side are from 20 to 30 m. broad, and in some places reach the height of 1,200 or 1,400 feet, while on the W. they gradually increase in elevation, the loftiest point being 2,911 feet above the level of the sea. In the S. part of the E. side these moors, or as they are called wolds, gradually become lower, and do not extend to the coast, but leave between them and the sea a large alluvial tract called Holderness. The central valley, as it descends from the N., becomes gradually wider, and at length flat and swampy as it approaches the Humber. The vale of York, the districts of Holderness and Cleveland, and several other extensive tracts, are exceedingly fertile; but a large extent of the soil of the wolds is altogether barren, or yields but scanty crops. Coal, iron, copper, lead, freestone, limestone, and alum are all found. Agriculture is not generally so far advanced as in some other parts of England. Great attention is paid to the breeding of horses, horned cattle, and sheep. The dairymen of London are principally supplied with cows from Yorkshire. The hams of Yorkshire have attained great celebrity. The iron works at Low

Moor, Rotherham, and Bowling are upon a very large scale; and the manufacture of hardware, cutlery, and plated ware is carried on most extensively, more particularly at Sheffield. The manufactures are almost wholly confined to a district of about 40 by 20 m. in the West Riding, and include cotton, woollen, linen, and silk. The central line of railway leading from London to Scotland passes through the county, and numerous other lines intersect it in different directions. Yorkshire returns 37 members to parliament, viz., 2 from each riding, and 31 from boroughs.

YORKTOWN, a port of entry, capital of York co., Va., situated on the right bank of the York river, 11 m. from its mouth, and 70 m. E. S. E. from Richmond. It was never a place of much commercial importance, and is chiefly noted for its two memorable sieges in 1781 and 1862.—On Aug. 1, 1781, Lord Cornwallis, in obedience to orders from Sir Henry Clinton to occupy a strong defensible position in Virginia, established himself at Yorktown with his whole army of about 8,000 men, supported by several frigates and smaller vessels which were anchored in the York river. He fortified the place by 7 redoubts and 6 batteries on the land side, connected by a line of intrenchments extending completely around the town, and by a line of batteries along the river. The town was further defended by a series of outworks, with redoubts strengthened by abatis, and field works mounted with cannon. Gloucester point, on the other side of the river, was also strongly fortified. In the latter part of September the combined American and French armies effected a junction with Lafayette at Williamsburg, whence, under the command of Washington, they marched on the 28th to the investment of Yorktown. The whole besieging force amounted to about 16,000 men, of whom 7,000 were French and the remainder continentals and militia. The British abandoned their outworks at the approach of the allies, and on the 30th the investment of the town was completed. On Oct. 9 the first parallel was established, and several heavy batteries opened with great effect upon the enemy, dismounting a number of their guns and destroying a frigate and 3 large transports. On the 11th the 2d parallel was opened; but as the working parties were greatly annoyed by an enfilading fire from two redoubts, a bold and successful attack was made upon them on the night of the 14th by two detachments, one American, commanded by Gen. Lafayette, and one French, and the captured works were included in the parallel. The position of Cornwallis now became exceedingly critical. Cut off from receiving reënforcements, or from escaping by sea, by the presence of the French fleet in Chesapeake bay, and knowing that his fortifications could not long withstand the fire from the 2d parallel, he determined to try the effect of a sortie upon the most advanced batteries of the besiegers. This having proved a complete failure, he conceived the desperate plan of crossing the river to Gloucester point with his whole available force, and pushing northward by rapid marches. But a violent storm which drove his boats down the river defeated this scheme, and to save the useless shedding of blood he proposed to capitulate. On the 19th terms were adjusted, and on the same day the British army to the number of about 7,000 surrendered to Washington as prisoners of war. The total British loss during the siege amounted to 550, and that of the allies to about 300. Among the spoils which fell into the hands of the victors were 75 brass and 160 iron cannon, nearly 8,000 stand of small arms, 28 regimental colors, and a considerable quantity of material of war. This success virtually decided the struggle for independence in favor of the revolutionists. Lord George Germain, who was the first to announce the news to Lord North, upon being asked how the premier took it, replied: "As he would have taken a ball in the breast; for he opened his arms, exclaiming wildly as he paced up and down the apartment: 'O God! it is all over!'"—The second siege of Yorktown was commenced by the United States troops under Gen. McClellan on April 5, 1862. For many months previous the confederate generals, in anticipation of an attempt to approach Richmond along the peninsula formed by the York and James rivers, had been erecting formidable works around Yorktown, and had carried a chain of redoubts across the peninsula to the mouth of the Warwick river, an affluent of the James. Strong works were at the same time erected on Gloucester point. The labors of the besiegers were impeded by frequent rains, and by a harassing fire from the sharpshooters of the enemy; but the parallels made steady progress toward the town, upon which in the beginning of May a severe fire was opened from several batteries of heavy siege guns. Skirmishes of more or less importance also became of daily occurrence, and a fleet of gun boats coöperated with the besieging force. On the night of May 3 the confederates quietly abandoned their works on both sides of the York river, and commenced their retreat to Richmond. At sunrise on the 4th, several hours after the departure of the enemy, the United States troops entered the deserted works, where were found 71 heavy guns, and large amounts of tents, ammunition, and other material of war. The works proved to be of scientific construction and great strength, and could have withstood a much severer cannonade than was brought to bear against them. The confederate forces, which consisted originally of a division under Gen. Magruder, were, according to ordinary estimates, increased during the siege to upward of 50,000 men. McClellan's troops probably numbered between 85,000 and 90,000. A pursuit of the enemy was immediately commenced, and on the 5th was fought the action of Williamsburg, after which the enemy retired unmolested behind the lines of Richmond.

YORUBA, a country of central Africa, lying N. of the bight of Benin and W. of the Niger, between lat. 7° and 9° 30′ N. and long. 1° 50′ and 5° 50′ E.; area, about 70,000 sq. m.; pop. estimated at 3,000,000. It is bounded N. by Barba or Borgoo, E. by Nufe or Nupe, S. E. by Benin, S. by Ijebu, Egba, Iketu, &c., and W. by Dahomey and Mahee. The principal towns are Ishabbeh, Iganna, Ishakki, Igboho, Ikishi, Ilorrin, Offa, Ogbomoshaw, Ejigbo, Iwo, Ideh, Ibadan, Ijaye, Isehin, Awaye, and Awyaw, the capital of the country. Most of these towns have from 20,000 to 50,000 inhabitants. The surface is undulating and elevated about 1,000 feet above the ocean; in the northern portion there are hills rising about 2,000 feet above the table land or 3,000 feet above sea level. The greater part of the country is prairie, though there are some forests along the river valleys. It is drained by the Ossoon, the Ogoon, the Awyun, and some smaller streams discharging their waters into the bight of Benin, and the Assa and Moze, tributaries of the Oya or upper Niger. The rivers are too rapid and too much obstructed by falls for navigation, but are not subject to floods. There are two seasons, the wet, from March to November, and the dry, from November to March. The quantity of rain, even during the rainy season, is not large. The average heat of the dry season is from 80° to 82° F., and the highest range of the mercury at Ijaye is 93°, and at Ogbomoshaw 97.5°. The heat, though not excessive, is long continued, and produces great lassitude. The harmattan or *awyeh* is a cool and very dry north wind, similar to the northers of Texas and Mexico, which causes the mercury to sink rapidly, sometimes as low as 60°. The climate is not sickly for the natives, but Europeans or Americans find the low lands very insalubrious. On the higher lands there is less to predispose to sickness, but whites are generally subject to great debility if their residence is protracted. Iron exists in large quantities, and there is said to be some copper. The rocks are mostly granitic. The forests are composed in part of short scrubby trees, and in part of those of gigantic size and height, while few of moderate dimensions are found; the African teak, the sassawood or *iroko*, and ebony are the most valuable of the forest trees. Camwood and the oil palm are also found in considerable quantities, as are the wine palm, the fan palm, the cocoanut, and a species of palmetto. Among the cultivated trees are several species of fig, none of which however bear valuable fruit, the butter tree, and the African locust, whose seeds are used in palaver sauce. Among the plants and shrubs of medicinal value are the cubebs, sarsaparilla (said to be superior to the Honduras), aloes, and the large white pond lily. The principal animals are the elephant, rhinoceros, hippopotamus, lion, leopard, panther, buffalo, 2 or 3 kinds of wild cats, civet cats, the hyæna, wild dog, cony, rabbit, several species of squirrels, and of antelopes, apes, and monkeys, and two of wild hogs. The birds are very numerous, and include the eagle, vulture, hawk, crow, heron, crested crane, stork, Guinea fowl, quail, partridge, dove, pigeon, wild duck, kingfisher, mocking bird, goatsucker, parrot, paroquet, love bird, cockatoo, hornbill, oriole, creeper, lark, sparrow, scarlet weaver, sunbird, &c. There are few fishes, perch, trout, catfish, and torpedoes being the principal. Some of the serpents, such as the python, are of great size. The termites or great white ants, with their hillocks larger than a native hut, and two species of the driver ant, one red and the other black, which devour every kind of vermin, are among the most remarkable of the insect tribes. Most of the domestic animals of Europe and America are reared in Yoruba. The sheep is covered with hair instead of wool. —The natives of Yoruba are for the most part brown or black, but have not the features or hair of the typical negro, though there are some of these among them, evidently of a different race, and far below the Yorubans in intelligence. The latter are an active and intelligent people, industrious, chaste, and of mild and truthful disposition, but fond of trading and avaricious. They learn readily, and are remarkable for their reverence for their parents and superiors. Their language is peculiar, differing from that of the nations adjacent, and is spoken by over 4,000,000 people. They are idolaters, but their religious system is remarkably free from cruelty. They hold some slaves, perhaps one fifth of the population. These are mostly prisoners taken in war, and are seldom treated with cruelty. The country is admirably adapted to the culture of cotton, which is there a perennial shrub or tree; the British government are seeking to stimulate its production. It has also been visited by the agents of the African civilization society of the United States, who report very favorably upon it.

YOSEMITE FALLS. See CALIFORNIA.

YOUATT, WILLIAM, an English veterinary surgeon, born in 1777, died in London, Jan. 9, 1847. He published "The Complete Grazier" (London, new ed., 1850); "Extent and Obligation of Humanity to Brutes;" "Treatise on Cattle" (new ed., 1851); "Treatise on Sheep" (new ed., 1851); "Treatise on the Horse" (1843); "Treatise on the Pig" (1847); and "Treatise on the Dog" (1848); and was the owner and editor of "The Veterinarian," established in London in 1828, the first periodical devoted to that class of subjects. His writings are still of authority.

YOUMANS, EDWARD LIVINGSTON, an American scientific writer and lecturer, born in Albany county, N. Y., in 1821. In his boyhood he contracted a malady of the eyes which deprived him of vision for several years. He had an early fondness for scientific study, and, with the help of a sister who read to him and assisted in experimenting, he devoted himself to chemistry. The difficulties he encountered in study from the loss of sight drew his attention forcibly to the subject of ocular illustration in science, and led to the publication of his "Chemical Chart of Colored Diagrams" (1851), for class-room use. In 1852 he published a "Class Book of Chemistry" (12mo., New York), an enlarged and revised edition of which appeared in 1862. This was followed by the "Atlas of Chemistry" (1854), in which the same plan of pictorial illustration was carried out, and accompanied by explanatory text. He has also published "Alcohol and the Constitution of Man" (1855), and the "Hand Book of Household Science" (1857). Mr. Youmans is a popular lecturer on scientific subjects. He is now (Dec. 1862) in Europe studying the various systems of primary education and the bearings of science upon educational progress.

YOUNG, a new N. W. co. of Texas, intersected by the Brazos river; area, 1,050 sq. m.; pop. in 1860, 592, of whom 92 were slaves. The surface is undulating and diversified by prairie and woodland, and the soil is fertile. Capital, Belknap.

YOUNG, ALEXANDER, D.D., an American clergyman, born in Boston in 1800, died there, March 15, 1854. He was graduated at Harvard college in 1820, studied theology at Cambridge, and in 1825 was settled as pastor of the New South Congregational church in Boston, which office he held till the close of his life. In 1849 he was chosen secretary of the board of overseers of Harvard college. He published "Discourse on the Life and Character of Nathaniel Bowditch" (Boston, 1838); "Chronicles of the Pilgrim Fathers of the Colony of Plymouth" (1841); "Chronicles of the First Planters of the Colony of Massachusetts Bay" (1846); "Library of Old English Prose Writers" (9 vols., 1831–'4); and several biographical and occasional discourses.

YOUNG, ARTHUR, an English writer on agriculture, born at Bradfield, Suffolk, Sept. 7, 1741, died there, April 12, 1820. The son of the rector of the parish, he was educated at Lavenham school, and in 1758 was apprenticed to a wine merchant at Lynn; but disliking business, he wrote a political pamphlet which he sold to a bookseller, began a periodical called the "Universal Museum," and stopped it by the advice of Dr. Johnson, and in 1760 began to write on agricultural subjects. In 1768 he published "A Six Weeks' Tour through the Southern Counties," which at once became popular, on account of its shrewd observations and lively, imaginative style; and this he soon followed with "A Course of Experimental Agriculture" (2 vols. 4to., London, 1770), which contained "an exact register of the course of business transacted during five years on over 300 acres of various soils," which he had managed at Samford Hall, Essex. While thus engaged in farming, he was also a parliamentary reporter to the "Morning Post" of London, and spent only Saturdays and Sundays on his farm; and accordingly at the end of his five years he paid £100 to another to take his lease off his hands. He now published his "Six Months' Tour through the North of England" (4 vols. 8vo., 1770), the fruit of a journey made in 1768, which was followed by "The Farmer's Tour through the East of England" (4 vols. 8vo., 1770); "The Farmer's Guide" (2 vols. 8vo., 1770); "The Farmer's Calendar" (1771); "Political Essays on the Present State of the British Empire" (1771); "Observations on the Present State of Waste Lands" (1771); "Rural Economy" (1772); and "Political Arithmetic" (1774). In 1775–'6 he visited Ireland, studying not only the farming of the country, but other matters of public interest, and there spent two years as the manager of a large estate near Cork, after which he published his "Tour in Ireland" (2 vols. 8vo., 1780). In 1779 he determined to emigrate to America, but was dissuaded by his mother. He now devoted himself to practical husbandry, working with his own hands, analyzing soils, making experiments, &c. Catharine II. sent to him three young Russians to be instructed in farming. His great work, the "Annals of Agriculture," began in 1784, and was continued through 45 8vo. volumes; to this George III., who afterward presented him with a merino ram, contributed under the name of Ralph Robinson. Engaging in a warm public discussion on the wool bill, in the interest of the farmers, he was burned in effigy by the manufacturers of Norwich in 1787. Making a horseback journey in France, followed by repeated visits to the continent, he next published his "Travels in France, Spain, and Italy" (2 vols. 4to., 1791), and about the same time printed in a pamphlet his correspondence with Washington. He had been a friend of liberal ideas, but the excesses of the French revolution drew from him a pamphlet entitled "The Example of France a Warning to Britain" (1793). Appointed secretary to the board of agriculture in 1789, with a salary of £400, he held that office till his death. In 1801 the French directory ordered his agricultural works to be translated, and they were published under the title of *Le cultivateur Anglais* (20 vols. 8vo., Paris.) He received countless testimonials from agricultural societies and distinguished persons, and has no doubt exerted a greater influence upon the progress of agriculture than any other writer.

YOUNG, BRIGHAM. See MORMONS.

YOUNG, EDWARD, an English poet, born at Upham, near Winchester, in 1684, died April 12, 1765. He was educated on the foundation at Winchester college, and subsequently entered All Souls' and Corpus Christi colleges, Oxford, at the former of which he received in 1708 a law fellowship. In 1714 he took the degree of LL.B., and in 1719 that of LL.D., but gave no attention to the practice of the law, his profession being rather that of poet and courtier, which he followed until his 80th year. His earliest publication was a poem entitled "An

Epistle to the Right Honorable the Lord Lansdowne," so full of fulsome adulation that the author, becoming ashamed of his own production, wisely suppressed it. In the same year appeared two long poems, "The Last Day" and "The Force of Religion," which were succeeded in 1714 by a "Poem on the Death of Queen Anne." Shortly afterward he began to devote himself to dramatic composition, and in 1719 produced at Drury Lane his tragedy of "Busiris." "The Revenge," brought out in the same theatre in 1721, was dedicated to the notorious Philip, duke of Wharton, who for several years previous had been his patron and admirer. It is still occasionally performed. In 1725-'8 appeared his satires, published under the general title of "The Love of Fame, the Universal Passion," by which he acquired much reputation, and, what was not less coveted by the poet, upward of £3,000 in money. In 1729 he took orders, and was nominated one of the king's chaplains; and thinking the occupation of dramatic author unsuitable to his new calling, he withdrew from rehearsal a new tragedy, "The Brothers," which was on the eve of being produced on the stage. In 1730 he received from All Souls' college the rectory of Welwyn in Hertfordshire, valued at £300 a year, and in the succeeding year was married to Lady Elizabeth Lee, daughter of the earl of Lichfield. The union was the source of much mutual happiness, and the death of his wife in 1741, accompanied by several contemporaneous family afflictions, gave rise to Young's most celebrated poetical work, the "Night Thoughts," published in London in 1742-'6. He produced many other poems and miscellaneous writings, and in 1762 published a collected edition of his works in 4 vols. 12mo. At the time of his death he occupied the office of clerk of the closet to the princess dowager of Wales.

YOUNG, John Clark, D.D., an American clergyman, born in Greencastle, Penn., Aug. 12, 1803, died June 23, 1857. He was educated at Columbia and Dickinson colleges, and at the Princeton theological seminary, and having been licensed to preach by the third presbytery of New York in 1828, became pastor of a church in Lexington, Ky. In 1830 he was elected president of Centre college, Danville, Ky., an office which he retained until his death. For some years he also had charge of a congregation in Danville. Dr. Young was one of the most influential ministers of his denomination in the United States.

YOUNG, Matthew, a British mathematician and prelate, born in county Roscommon, Ireland, in 1750, died at Whitworth, Lancashire, Nov. 28, 1800. He was educated at Trinity college, Dublin, took orders, became professor of natural philosophy in his college in 1786, was one of the founders of the royal Irish academy, to whose "Transactions" he contributed extensively, and was made bishop of Clonfert and Kilmacduach. He wrote a commentary on the *Principia* of Newton, and published "An Essay on the Phenomena of Sounds and Musical Strings" (1784), and "Principles of Natural Philosophy" (1800).

YOUNG, Thomas, an English scholar, born at Milverton, Somersetshire, June 13, 1773, died in London, May 10, 1829. Of a Quaker family, and the youngest of 10 children, he spent 6 years at school, studying Latin, Greek, French, Italian, and Hebrew, was a private tutor for 4 years (1787-'92), studying in his leisure oriental languages also, with the higher mathematics, botany, zoology, and entomology, and amusing himself with turning and microscope making, and then went to London to study medicine. His medical studies, which he had for some time varied with the study of music and the pleasures of refined social life, led him to Edinburgh in 1794, in which year he was chosen a fellow of the royal society. In 1795 he went to Göttingen, where he studied civil and natural history, medicine, gymnastics, and horsemanship for 9 months, and took the degree of M.D., and after a tour through Germany returned to England in 1797. He entered Emmanuel college, Cambridge, as a matter of form, was graduated in 1799, and in 1800 commenced the practice of medicine in London. But having inherited a handsome property, he never sought an extensive practice, preferring instead to devote himself to his favorite studies. In 1801 he was appointed professor of natural philosophy at the royal institution, but was too profound and precise to be popular as a lecturer, and resigned in 1803. In 1802 he became foreign secretary of the royal society, which office he retained till his death. His lectures before the royal institution, afterward published as "A Course of Lectures on Natural Philosophy and the Mechanic Arts" (2 vols. 4to., 1807), containing a complete system of natural philosophy, set forth the principle of interferences in the undulatory theory of light, of which Sir John Herschel says that "this discovery alone would have sufficed to place its author in the highest rank of scientific immortality, even were his other almost innumerable claims to such distinction disregarded." He lectured on the elements of medical science and practice at the Middlesex hospital in 1809-'10, and was chosen one of the physicians of St. George's hospital in 1811. Having studied the Coptic language, he endeavored to interpret the hieroglyphics of Egypt, and, though not perfectly successful, was before Champollion in the career of brilliant discovery which unlocked the records of that ancient country. (See Hieroglyphics, vol. ix. p. 162.) In 1813 he published "An Introduction to Medical Literature" (2d ed., 1823), and in 1815 "A Practical and Historical Treatise on Consumptive Diseases." In 1816 he became secretary to the commission to establish a more uniform system of weights and measures, and drew up the three reports of that commission (1819, 1820, 1821); in 1818 he was appointed secretary to the board of longitude, and after its dissolution conducted the "Nautical Almanac." In 1827 he was chosen, in place of Volta, a foreign associate of the academy of sciences in Paris. His "Miscellaneous Works" have been collected by Dean Peacock and Mr. John Leitch (4 vols. 8vo., London, 1855), by the former of whom his "Life" was also written (8vo., 1855). The work on which he was engaged at the time of his death was published posthumously, entitled "Rudiments of an Egyptian Dictionary" (8vo., London, 1830).

YOUNG, Thomas John, an American clergyman, born in Charleston, S. C., Oct. 22, 1803, died there in Oct. 1852. He was graduated at Yale college in 1823, was tutor in Charleston college for one year, studied at the Episcopal theological seminary in New York, was ordained by Bishop Bowen in 1827, was rector of several country parishes in South Carolina, and in 1847 became assistant rector of St. Michael's church, Charleston, which office he retained till his death. He was a zealous and kindly, as well as studious man, and an efficacious preacher, and devoted himself especially to the spiritual welfare of the negroes.

YPRES (Flemish, *Yperen* or *Ypern*), a fortified city of Belgium, province of W. Flanders, on the river Yperlé, 30 m. S. W. from Bruges; pop. 17,975. It is situated in a marshy and unhealthy region, has a Gothic cloth hall, begun in 1342, now used as a council house and for other public purposes; the Gothic church of St. Martin, where Jansenius, bishop of Ypres, is buried, and other churches; 2 colleges, 4 hospitals, &c. Woollen, cotton, and linen goods, laces, ribbons, &c., are manufactured, and salt is made.—Ypres was first surrounded with walls in 1388, and was strongly fortified by Louis XIV. in 1688. In the 14th century it had 200,000 inhabitants and employed 4,000 looms.

YPSILANTI, a city of Washtenaw co., Mich., on the Huron river and the Michigan central railroad, 30 m. W. by S. from Detroit, and 254 from Chicago; pop. in 1860, 3,955. It is pleasantly situated in the midst of a rich and populous agricultural district, and is the seat of the state normal school. It has also an excellent union school with 4 ward schools, 8 churches, 2 newspaper offices, and several mills and manufactories of woollen goods, iron, flour, furniture, leather, paper, &c.

YPSILANTI, the name of a powerful and wealthy Fanariote family, originating at Trebizond, and claiming descent from the Comneni. I. Athanasius, in the beginning of the 18th century, was a favorite of the sultan at Constantinople. II. Alexander, his son (put to death in 1805), was interpreter at the Sublime Porte, became hospodar of Wallachia in 1774, granted religious freedom to Lutherans in 1780, resigned in 1781, was appointed to the same office in 1790, was taken prisoner by the Russians and released after the peace of Jassy in 1792, was suspected by the Porte of treasonable relations with Russia, and was executed with great tortures. III. Constantine, son of the preceding, born in Constantinople about 1760, died in Kiev in 1816, conspired to free Greece, but was discovered and fled. His father having obtained his pardon, he returned and became interpreter to the Porte, and in 1799 was appointed hospodar of Moldavia, and shortly afterward of Wallachia. Dismissed in 1805, he entered the Russian service to fight against Turkey, but after the peace of Tilsit withdrew to Kiev, where he lived on a pension from the Russian government. IV. Alexander, son of the preceding, born in Constantinople, Dec. 12, 1792, died in Vienna, Jan. 31, 1828, entered the Russian service in 1809 as an officer in the cavalry of the guard, became major in 1812, and lost his right hand in the battle of Dresden, Aug. 27, 1813. He was made a colonel and adjutant of Alexander I., and in 1817 became a major-general. In 1820 he took the leadership of the movement projected by the Hetæria, the secret society formed to promote the independence of Greece, and the outbreak began in the Danubian principalities in Feb. 1821; but the fatal issue of the battle at Dragashan, June 19, 1821, put an end to the project for the time. Ypsilanti surrendered himself to the Austrians, and was kept a prisoner by them for six years; and when released in 1827, through the interposition of the czar Nicholas, his health was hopelessly destroyed. V. Demetrius, brother of the preceding, born in Constantinople, Dec. 25, 1793, died in Vienna, Jan. 31, 1832, distinguished himself in the Russian service in 1814, joined the insurrection in the Morea in June, 1821, demanded that the supreme command should be given him, and on its refusal quarrelled with the party of Mavrocordato, but took command of the siege of Tripolitza, which he carried by storm in October, but was repulsed in December at Nauplia. In Jan. 1822, he was chosen president of the national assembly, and met with varying but not remarkable fortune as a military leader during the spring, but in July distinguished himself by audaciously holding the citadel of Argos and rendering possible the total destruction of the enemy in the passes between that place and Corinth. In 1823 he withdrew from public affairs, but in June, 1825, successfully opposed Ibrahim Pasha at the mills of Lerna, and in 1826 took a prominent part in advocating the rejection of the proposed English protectorate. When Capo d'Istria assumed the government in 1828, Ypsilanti was made commander of the troops in eastern Greece, but resigned in 1830. In April, 1832, after the assassination of Capo d'Istria, he was chosen one of the 7 members of the executive commission, and held that office till his death.

YRIARTE, Juan de, a Spanish linguist, born at Orotava, in the island of Teneriffe, Dec. 15, 1702, died in Madrid, Aug. 23, 1771. In 1714 he was sent to school at Paris, afterward studied the English language in London, revisited Teneriffe in 1724, and then went to Madrid and became a secretary in the royal printing office, a librarian in the royal library, and in 1740 official translator to the principal secretary of state. He was elected a member of the royal academy in 1743, and devised an improved system of orthography, punctuation, and accentuation for the Spanish language. He began a Spanish-Latin dictionary, but never went beyond the letter A. He left in manuscript *Historia de las islas de Canaria*, and *Paleografia Griega*. A selection of his works was published in 1774 (2 vols. 4to., Madrid).—TOMAS DE, a Spanish author, nephew of the preceding, born at Orotava, Teneriffe, Sept. 18, 1750, died in Madrid, Sept. 17, 1791. He received his education in Madrid under the auspices of his uncle, and at the age of 18 produced some translations of French plays which were performed upon the Spanish stage. He also acquired considerable reputation at court as a classical and belles-lettres scholar, and received a place in the office of the secretary of state, which he retained until the close of his life. His literary pursuits were much interrupted by personal controversies with rivals, and in 1786 he was summoned before the inquisition on suspicion of being tainted with the new French philosophy. His published works, apart from his controversial writings, comprise original and translated dramas, didactic poems, and fables. The best of his poems is *La musica*, published in 1780, which has passed through 5 editions and been translated into the chief European languages. His reputation however rests upon his fables, nearly 80 in number, and written in upward of 40 different metres. The fictions were all invented by himself, in which respect they differ from similar modern productions, and, what is also a novelty, they are restricted in their moral purpose to the correction of the faults and follies of men of learning. "They are too narrative in their structure," says Ticknor, "and fail somewhat in the genial spirit which distinguishes Æsop and La Fontaine; but their influence was so much needed in the age of bad writing in which they appeared, and they are beside so graceful in their versification, that they were not only received with great favor at first, but have never lost it since." They have been translated into English by George H. Devereux ("Literary Fables of Yriarte," 16mo., Boston, 1855).

YTTRIUM (from Ytterby, in Sweden, where the minerals containing it were first found), a rare metal, first obtained pure by Wöhler in 1828, the oxide of which, discovered by Gadolin in 1794, occurs in small quantity as a component of several minerals, such as gadolinite, tankelite, yttro-cerite, &c. It is most conveniently obtained from its chloride, upon heating in a platinum crucible a stratified mixture of this salt and potassium. The chlorine passes to the latter, the metal yttrium remaining in shining, pulverulent scales, of iron-gray color, but which upon burnishing show a high metallic lustre. Its symbol is Y. Yttrium is not oxidized in the air at red heat, nor by contact with steam; but in oxygen gas it burns brilliantly, yielding a white protoxide, or yttria. This, however, is best secured through a process employed to separate it from the mineral gadolinite; the carbonate is thus first formed, and being ignited, yttria remains. Yttria (YO) is a white powder, without odor or taste, soluble in the carbonates of the alkalies, especially that of ammonia. Upon precipitating its salts from an aqueous solution, it takes the form of a hydrate. With phosphorus, sulphur, iodine, &c., yttrium forms colorless and more or less crystalline salts. The chloride is obtained upon passing chlorine over a mixture of yttria and charcoal, in a heated porcelain tube. A characteristic of solutions of yttria is their yielding a white precipitate with ferrocyanide of potassium.

YUBA, a N. co. of California, bounded W. by the Feather river and S. by Bear river, and intersected by the Yuba river; area estimated at 863 sq. m.; pop. in 1860, 13,671. The E. part is mountainous, being traversed by the Sierra Nevada range, and the W. part is undulating or level. The soil is highly fertile. The productions in 1858 were 85,975 bushels of wheat, 153,765 of barley, 8,700 of oats, 3,750 of Indian corn, 21,000 lbs. of wool, and 2,395 tons of hay; and there were 50,000 grape vines. There were 6 grist mills, 27 saw mills, an iron foundery, 9 quartz mills, and 2 newspaper offices. It is one of the most important mining counties in the state. The county is intersected by the San Francisco and Marysville and the central railroads, unfinished. Capital, Marysville.

YUCATAN, called also MERIDA and CAMPEACHY, a state of the Mexican confederation, comprising the peninsula of the same name, bounded N. W. and N. by the gulf of Mexico, N. E. by the channel or strait of Yucatan, which separates it from Cuba, E. by the Caribbean sea, S. by Balize and Guatemala, S. W. by Tabasco, and W. by the bay of Campeachy. It lies between lat. 18° and 21° 40′ N., long. 87° 25′ and 90° 30′ W.; length from N. to S. about 250 m., mean breadth 200 m.; area, 47,253 sq. m.; pop. in 1857, 680,325. The coast has few indentations. In the S. W. there is an extensive lagoon called Laguna di Terminos, lying partly in the state of Tabasco. On the S. E. are 3 small bays, the Puerto de Calenturas, Bahia del Espiritu Santo, and Bahia de la Ascension. The rivers are few and small, and when rain fails the interior becomes a dry and parched desert, where springs of fresh water can scarcely be found. The San Francisco, Champoton, and Honda are the largest streams. There is one lake of considerable size, Lake Chichancanab. The interior is occupied by lofty ridges, which are dry and sterile. Toward the coast the country is better watered, and much of it is covered with heavy forests of baywood, redwood, mahogany, and other trees of large size and great value. Considerable tracts are cultivated, and produce cotton, maize, rice, pepper, tobacco, and sugar cane. Cattle are also raised in large numbers, and beef salted or dried and salted hides form important articles of export. The other exports are salt fish, dye woods, straw hats, honey and wax, cocoanuts and other fruits, and the hemp called *jenequen*, produced from the fibres of the agave. The state is divided into 5 dependencies and 18 districts. Its principal towns are Merida, the capital, Campeachy, Valladolid, Izamal, Bacalar, and Tekax. Sisal is the port of Merida, but has little trade. Campeachy is the principal seaport. The evidences of a higher civilization possessed by the race who originally inhabited Yucatan are abundant and interesting. The ruins of Uxmal, Chichen, Kabah, Zayi, &c., have been explored by Messrs. Stephens and Catherwood, and others. Those of Uxmal, the most remarkable, are situated about 45 m. S. S. W. from Merida, and 10 m. from those of Zayi. They comprise numerous massive limestone structures built on broad terraced platforms, and all highly ornamented. The largest single building is called the "house of the governor," which has a front of 322 feet, and contains 24 rooms. The most beautiful structure is the "house of the nuns," composed of 4 ranges enclosing a large courtyard, with 88 apartments. The "house of the dwarf," on a very steep mound 88 feet high, was a *teocalli* for human sacrifices. About $\frac{5}{6}$ of the population of Yucatan are of pure Indian blood, and speak the Maya language. The remainder are mostly of mixed race, with a few whites, generally of European birth. Education is at a low ebb, though there is a college at Campeachy, and schools in the larger towns.—Yucatan was discovered in 1517 by Francisco Hernandez Cordova, and subjected by Cortes. From 1821, when the Spanish yoke was thrown off, it remained independent till 1824, when it united with the Mexican confederation. In 1840 it proclaimed itself again an independent republic, and in 1843, having secured its own terms of peace, reëntered the confederation. It was again independent from 1846 to 1852.

YUGYAKARTA. See Jokjokarta.

YUPURA. See Japura.

YUSUF. See Joussouf.

YVERDUN, or Yverdon (anc. *Ebrodunum*), a town of the canton of Vaud, Switzerland, 18 m. N. from Lausanne, near the mouth of the Thiele, on the lake of Neufchâtel; pop. in 1850, 3,619. It has an old castle built in 1135 by Conrad, duke of Zähringen, in which Pestalozzi established in 1805 his educational institute, and developed the principles of his system of education.

YVON, Adolphe, a French painter, born at Eschwiller, department of Moselle, in 1817, studied under Paul Delaroche, travelled in Russia in 1843, and brought back with him a series of designs which were exhibited in Paris in 1847–'8. Beside several portraits, he has produced "The Remorse of Judas" (1846), "The Battle of Kolikova" (1850), "The First Consul descending the Alps" (1853), "Marshal Ney supporting the Rear Guard in Russia" (1855), and "The Seven Deadly Sins," designed after Dante (1855). He was sent to the Crimea by the government, and painted "The Capture of the Malakoff" (1859), &c. He is an artist of remarkable power, and holds a prominent place among the living historical painters of France.

Z

Z, the last letter of the Teutonic, Romanic, and most of the Slavic alphabets, the 6th of the Greek, and the 7th of the Hebrew, Phœnician, and Arabic. In English, French, Portuguese, and modern Greek, it is simply a linguodental consonant, forming the feeble or sonorous counterpart of the sibilant S, the difference between the two resulting from the fact that in sounding Z the vocal chords of the glottis are used, while in sounding S they are inactive. In all these languages the regular sound of Z is that heard in the words *zone*, *zebra*, *zinc*. In the ancient Greek it had the sound of *ds*, and was reckoned metrically as a double consonant. It was introduced into the Latin in the time of Augustus, when it was placed at the end of the alphabet. In German it is pronounced as *ts;* in Italian as *ts* and *tz;* in Spanish like *th* in *think*. The Russians have two letters, one the 8th of their alphabet, representing our simple Z, the other the 23d, equivalent to *ts*.—As a numeral the Greek Z signifies 7; among the Romans Z stood for 2,000; with a horizontal line over it, for 2,000,000.

ZACAPA. See Sacapa.

ZACATECAS, a central state of the Mexican confederation, bounded N. by Durango, Coahuila, and New Leon, E. by San Luis Potosi, and S. and W. by Guadalajara; area, 26,833 sq. m.; pop. in 1857, 302,141. It nearly encloses the little state of Aguas Calientes. Zacatecas belongs to the central table lands of Mexico, and much of it is arid. It is drained by the affluents of the Santiago, the Santander, and the Rio Grande del Parras. It has 9 lakes, all highly impregnated with carbonate of soda. The mountains of the Sierra Madre, which traverse the state, contain some of the richest silver mines on the continent. There are 3 extensive veins, upon which nearly 3,000 shafts have been opened, and it is estimated that these mines have produced silver to the value of $1,000,000,000. The most celebrated mines are those of Zacatecas and Sombrerete. The principal towns are Zacatecas, the capital, Fresnilla, Sombrerete, Lagos, and Aguas Calientes. The principal productions beside silver are cattle and grain. Near the western boundary of the state are extensive ruins, called Los Edificios, supposed to be the remains of ancient temples.—Zacatecas, the capital, is situated in a narrow valley, 150 m. N. N. W. from Guanajuato; pop. in 1854, 25,427. It is built over a vein of silver, which has been deeply explored. It has a fine appearance from a distance, owing to the size and massiveness of its churches, and the elegance of some of its residences; but its streets are narrow and crooked. It has a manufactory of gunpowder and a mint.

ZACH, Anton, baron von, an Austrian general, born in Pesth, June 17, 1744, died in Gratz, Nov. 22, 1826. He entered the academy of engineers in Vienna in 1760, served in the 7 years' war on the general staff, taught mathematics in the Vienna military academy, was at the siege of Belgrade in 1788, and was major-general and quartermaster-general in Italy in 1796; in 1799 was chief of the staff, and led the grenadiers at Marengo, where he was captured. In 1801 he was made a field-marshal lieutenant, and in 1806 governor of Trieste.—Franz, baron von, a German astronomer, brother of the preceding, born in Presburg, June 4, 1754, died of cholera in Paris, Sept. 2, 1832. He served in the Austrian army, spent some time in England, was director of the observatory at Seeberg near Gotha from 1787 to 1806, accompanied the widowed duchess of Saxe-Gotha in a journey in France in 1804–'5, removed to the south of France in 1812, and went with the duchess to Italy in 1813, settling at Genoa, where they remained till her death in 1827, when he returned to Paris, and was relieved from the stone by the operation of lithotrity, and remained there till his death. While in Italy he took great interest in the establishment of an observatory at Naples, and another at Lucca. His *Geographische Ephemeriden* and *Monatliche Correspondenz* (28 vols., Gotha, 1800–'13), publications of great value, he continued after he was in Italy under the title of *Correspondance astronomique* (1818–'28). He also wrote on the attraction of mountains, and published several series of astronomical tables.

ZACHARIÄ, Justus Friedrich Wilhelm, a German poet, born in Frankenhausen, May 1, 1723, died in Brunswick, Jan. 30, 1777. He studied law at Leipsic, but devoted himself to literature, at first adhering to Gottsched, but afterward going over to the new school. He was professor of belles-lettres at Brunswick when he died. His first work, *Der Renommist*, a mock heroic poem, was published by Gottsched in 1744, and his best productions are of that class. He translated "Paradise Lost" into German hexameters. His collected works were published in 2 vols. (1772), and a volume of his posthumous writings appeared in 1781.

ZACHARIÄ VON LINGENTHAL, Karl Salomo, a German jurist, born in Meissen, Sept. 14, 1769, died in Heidelberg, March 27, 1843. He studied at Leipsic and Wittenberg, and in 1797 became professor of law at the latter university, whence he removed to Heidelberg in 1807, afterward declined professorships at Göttingen and Leipsic, was repeatedly chosen a member of the legislature of Baden, and was ennobled in 1842. His works are numerous and of very great value.

ZAFFRE. See Cobalt, vol. v. p. 403.

ZAGOSKIN, or Sagoskin, Mihail Nikolaievitch, a Russian dramatist and novelist, born in Ramzay, in the government of Penza, July 26, 1789, died in Moscow, June 5, 1852. At 14 years of age he became clerk in a government office at St. Petersburg, and in 1812 an officer of the militia of the capital. He was wounded at the battle of Polotzk, and participated in the siege of Dantzic as adjutant to Gen. Lewis. After the conclusion of the war he wrote a comedy called *Prokavnik*, or "The Wag," which was acted at the St. Petersburg theatre. He now obtained a situation connected with the theatre, and was made honorary librarian of the imperial library. In 1820 he became director of the theatre at Moscow. He wrote 17 comedies, of which the most important are: "Mr. Boganotoff, or the Country Gentleman in the Metropolis;" "Boganotoff the Second, or the Metropolitan in the Country;" "A Romance on the High Road;" and "The Journey Abroad." In 1829 he produced at Moscow a novel in 3 volumes entitled "George Miloslaffsky, or the Russians in 1612," which gave him a high reputation in Russia. In 1834 the romance appeared in an English translation under the title of "The Young Muscovite, or the Poles in Russia," edited by Capt. Frederic Chamier, R. N. None of his many later novels attained the success of the first. He published 3 or 4 volumes of essays under the title of *Moskva i Moskvitchi.*

ZAGRAB. See Agram.

ZAHN, Johann Karl Wilhelm, a German architect and painter, born at Rodenburg, Aug. 21, 1800, was educated in Cassel, visited Paris and Italy in 1822–'4, and was in Italy again from 1830 to 1840, when he returned to Berlin, where in 1829 he had been appointed professor in the academy of fine arts. His principal work is *Die schönsten Ornamente und merkwürdigsten Gemälde aus Pompeji, Herculanum und Stabiä* (Berlin, 1828).

ZAIRE. See Congo.

ZAJONCZEK, Jozef, a Polish prince, born at Kamieniec in 1752, died in Warsaw, July 28, 1826. He served under Kosciuszko in the war against Russia, became a major-general, emigrated to France, served under Bonaparte in Italy and Egypt, was a general of division in 1802, lost a leg at the battle of Polotzk, Aug. 17, 1812, where he commanded an army corps, on the creation of the kingdom of Poland in 1815 was appointed viceroy by Alexander I., made a prince in 1818, and on the accession of Nicholas in 1825 was confirmed in all his titles and dignities. The Poles, who rejoiced at his appointment, found him devoted to the czar, and came to hate him accordingly. He wrote an *Histoire de la révolution de Pologne en* 1794 (Paris, 1797).

ZALEUCUS, the lawgiver of the Epizephyrian Locrians in southern Italy. He is said to have been originally a slave, and employed as a shepherd, but Diodorus describes him as of good family. So much disorder and distress prevailed among the colonists, that they applied to the oracle at Delphi for a remedy, and were enjoined to make laws for themselves. These they received from Zaleucus, who published ordinances which he professed to have received from the goddess Minerva in a dream. They were promulgated in 664 B. C., 40 years earlier than the code of Draco, and were therefore the first collection of written laws possessed by the Greeks. There is nothing certain in regard to them except their extraordinary rigor, and their having definite penalties attached to their violation. They were for a long time observed by the Locrians; and so great, we are informed, was their aversion to any change, that whoever proposed a new law was obliged to appear in public with a rope around his neck, and if his proposition was not accepted he was immediately strangled. The penalty for adultery was the loss of both eyes. The son of Zaleucus was convicted of that crime, but the father, refusing to grant the prayers of the people to remit the punishment, had one of his own eyes put out and one of his son's, in order to satisfy the demand of the law. According to one account, Zaleucus fell fighting for his country; according to another, he slew himself for violating one of his own laws.

ZALUSKI, a Polish family, of whom the following are the most distinguished members: I. Andrzej Chryzostom, an orator and author, born about 1650, died in 1711. He was bishop of Ermeland and grand chancellor of Poland under Augustus II., and wrote, though not for publication, *Epistolæ Historico-Familiares* (4 vols., Braunsberg, 1709-'61), which contain valuable materials for the history of the government of John Sobieski. II. Jozef Andrzej, founder of one of the greatest libraries of eastern Europe, nephew of the preceding, born in 1701, died Jan. 9, 1774. He was the son of the waywode of Rawa, and became canon of Plock and grand referendary of the kingdom. Upon the contest for the succession, which sprang up after the death of Augustus II., between his son Augustus III. and Stanislas Leszczynski, he embraced the cause of the latter, by whom he was sent to Rome as ambassador to Pope Clement XII. There he remained 3 years, and when Stanislas repaired to Lorraine, he went to his court. Obtaining an amnesty from Augustus, he went back to his native country and was made bishop of Kiev. With the assistance of his brother, the bishop of Cracow, he laid the foundations of a vast library, collected from foreign sources and the monastic and scattered libraries of Poland. In 1748 it was placed in a building at Warsaw owned by the two brothers, and there kept for the use of the public. In 1766, at the diet, he inveighed so violently against the dissidents, protected by Russia, that, upon the demand of the Russian ambassador Repnin, he was taken to Kalooga, and there confined until 1773. During his residence there he wrote from memory a bibliographical account, in a kind of blank verse, of the books in his library which treated of Polish history. It was published in 1832 at Cracow under the title of *Biblioteka historyków polskich.* By his will the library was left to the Polish people, but after his death it received no accessions, and on the third partition of Poland in 1795 was carried to St. Petersburg, where it formed the nucleus of the present imperial library. Although it had diminished rather than increased when taken to Russia, it numbered then 262,640 volumes and about 25,000 engravings. Most of the books were in the Latin, French, and German languages; 4,368 were in English, 4,051 in Polish, and 25 in Russian; and 80,000 volumes were on the subject of theology. Zaluski composed an autobiography in verse, and a *Specimen Historiæ Poloniæ Criticæ* (Dantzic, 1733), and wrote several bibliographical works, part of which have been printed. His writings, though marked by extraordinary learning, are very deficient in taste.

ZAMA, Battle of. See Hannibal.

ZAMBECCARI, Francesco, count, an Italian aëronaut, born in Bologna in 1756, killed Sept. 21, 1812. He was of a noble family, entered the Spanish naval service, fell into the hands of the Turks, and was put in the bagnio at Constantinople, but was finally liberated through the mediation of the Spanish ambassador. Having given attention to the subject of aëronautics, he invented an apparatus for steering the balloon, his theory of management being based upon the difference in the direction of the air currents at different heights. By increasing or diminishing the volume of gas in his balloon, he proposed to rise or descend at pleasure, and then to guide his course by oars. Attempting to carry his project into execution, he lost his life by the balloon catching in a tree and taking fire.

ZAMBESI, Zambezé, or Secheke, a river of E. Africa, which rises in Lake Dilolo, in lat. 11° 30′ S., long. 23° 30′ E. It is first called the Leeba, and flows S. S. E. for about 200 m., where it is joined from the N. E. by the Leeambye, which is believed to have its origin in Lake Shuia, and may be the main stream. Its next course is S. about 150 m., then S. E. about 200 m., when it receives from the S. W. the Chobe, a very large river, which has its source in the direction of Benguela and the Damaras country. About 40 m. from the mouth of the Chobe are the Victoria falls, first discovered and fully described by Dr. Livingstone, where the river, about half a mile wide, rushes over a precipice 100 feet high, and, turning almost at a right angle, flows for 30 m. between two walls of rock in a channel not more than 20 yards wide. About 300 m. below the falls it receives from the left the Kafue, another large affluent, and 140 m. further down the Loangwa, flowing from the north. Its next course is E. and S. E. for nearly 400 m. more to its delta, receiving about 30 m. above the apex of the delta the Shire, a large and navigable river from the N. Its waters are discharged by several mouths, the delta extending 75 or 80 m., but sand bars prevent the entrance of large ships. Inside the bar the river is navigable for 940 m. to the falls, and above them for nearly 400 more. Its whole course from Lake Dilolo is 1,430 m., but reckoning from the source of the Leeambye it is probably somewhat longer. It is liable to inundations.

ZAMOJSKI, or Zamoyski, an ancient family of Poland, of which the following have been the most distinguished members. I. Jan, a statesman and general, born in Skokow, in the palatinate of Chelm, April 1, 1541, died near Skokow, July 3, 1605. He was educated at Paris, Strasbourg, and Padua, at which last place he published in 1562 a funeral oration on Fallopius, and in 1563 a learned treatise on the constitution of the Roman senate. In 1564 he was elected rector of the university, and while in that office published a digest of the privileges of the institution, and a dissertation entitled *De Perfecto Senatore Syntagma.* In 1565 he returned to Poland, and from 1569 to 1572 was employed in arranging the documents in the public archives. He was made starost of Bielsk, and upon the death of King Sigismund Augustus in 1572, he succeeded in so organizing the equestrian order, that in the diet of 1573, held at Warsaw, Henry of Anjou (afterward Henry III. of France) was chosen king of Poland. He was sent to Paris at the head of the embassy commissioned to announce to the monarch his election; and upon Henry's acceptance of the crown, Zamojski was appointed grand chamberlain and starost of Kryszyn. Upon the abandonment of Poland by Henry, a party of nobles elected Maximilian II. of Austria, and he was proclaimed king by the primate; but the party hostile to the house of Austria chose Stephen Báthori, who marched rapidly to Cracow, and was there crowned. Zamojski, who was the leader of this movement, was made grand chancellor of the kingdom. In 1580, during the war with Russia, Báthori appointed him commander of the principal army, with the title of hetman; and in 1582 he negotiated the peace by which Livonia, Esthonia, and Novgorod were ceded to Poland. The bitter enmity which his favor with the king, whose niece he married, had excited, and his unpopularity for the share he had in the execution of a nobleman, Samuel Zborowski, led him to retire to a great extent from public life, and to spend his time in improving his estates. After the death of Báthori in 1586, he might have secured the crown for himself; but he used his influence in favor of Sigismund III., the son of the king of Sweden, defeated the army of the opposing claimant, the archduke Maximilian, at Cracow, pursued him into Silesia, and took him and his forces prisoners. From 1590 to 1597 he was engaged in a constant series of wars; and while Sigismund, with whom he was no favorite, did not concern himself about the condition of the kingdom, he almost alone maintained the integrity of the state, fighting successfully against the Turks, Tartars, and Cossacks, and oftentimes supporting the army from his private fortune. In 1597 he was engaged in a successful campaign against the Swedes, when increasing infirmities compelled him to give up the command and retire to his estates, where he devoted himself to literary pursuits, the results of which were published under the title of *Dialecta Chrysippea.* In 1605 he made at the diet a violent speech against the king, to which Sigismund made a violent reply, menacingly putting his hand upon his sword. The chancellor cried out: "Withdraw your hand from your sword, prince; do not oblige history to record that we were Brutuses and you a Cæsar." Zamojski was not only a great statesman and general, but a munificent patron of literature and the sciences. He founded New Zamosc, which came to be regarded as one of the strongest fortresses of Poland, and established there an academy and a famous printing press. He wrote *Testamentum Joannis Zamori* (Mentz, 1606), and many letters of his are to be found in Lunig's *Literæ Procerum Europæ.* II. Jan II., a general, grandson of the preceding, born in 1626, died in Warsaw, April 2, 1665. He participated under John Casimir in the campaign of 1651 against the Cossacks, was made palatine of Sandomir, and was very conspicuous in the following wars. In 1659 he was at the head of the army which acted in the Ukraine against the czar of Russia. III. Andrzej, count, a statesman, born in Biezun in 1716, died in Zamosc, Feb. 10, 1792. He entered the military service of Saxony, went back to Poland in 1754 with the rank of major-general, and was made marshal of the palatinate of Smolensk. In 1760 he emancipated his serfs, a measure which met with much opposition from the nobility. On the accession of Stanislas Augustus he was appointed grand chancellor; but when, in 1767, at the demand of the Russian general Repnin, several senators and bishops were taken to Kalooga, he indignantly resigned his office and retired to private life. In 1776, at the request of the diet, he undertook to draw up a code of laws, which he completed in two years. It was printed under the title of *Zbiór praw sądowych* (3 vols., Warsaw, 1778). The liberal character of the code, especially its provision for a general measure of emancipation, aroused against it so great a hostility, that in the diet of 1780 it was not permitted to be read, but it was adopted in 1791.

ZAMPIERI. See Domenichino.

ZANESVILLE, a city and the capital of Muskingum co., Ohio, situated on the left bank of the Muskingum river, at the mouth of the Licking river, and at the intersection of the central Ohio and the Cincinnati, Wilmington, and Zanesville railroads, 60 m. E. from Columbus, and 179 m. E. N. E. from Cincinnati; pop. in 1860, 12,000. The Muskingum is here crossed by an iron railroad bridge 538 feet long, and 3 other bridges. The city is well built, with wide regular streets, lighted with gas, and has water works, 15 churches, free schools, with a fund of nearly $500,000 left by John McIntire, one of the first settlers of the place, for the education of poor children, 5 newspaper offices, a bank, 2 cotton and 2 woollen factories, 2 glass works, 5 iron founderies, a sugar and cider mill factory, a paper mill, 5 flouring mills with a capacity for 2,000 barrels daily, a brass and bell foundery, 2 oil mills, 3 steam engine and machine manufactories, a rolling mill and nail factory, an iron blast furnace, extensive potteries, and manufactories of furniture and wooden ware. The rivers afford great water power, and the city is in the midst of large fields of coal, iron ore, fire clay, &c. Zanesville was settled in 1799, and from 1810 to 1812 was the capital of the state.

ZANGUEBAR, a name now falling into disuse, but formerly given by the Portuguese, and after them by other Europeans, to a tract of country on the E. coast of Africa. Its boundaries have never been defined; it is laid down by most geographers as extending from the country of the Somauli or Eesah, about lat. 4° 10′ N., to the N. frontier of Mozambique, near Cape Delgado, lat. 10° 38′ S. It has been little explored except near the sea. There are several towns on the coast, the principal of which are Magadoxo, Jubb, Mombas, Melinda, Bagamoyo, Mhoamaji, and Quiloa, and there are some excellent harbors, though dangerous reefs line a great part of the shore. There are two or three large and important islands a little way out to sea, including Pemba, Zanzibar, and Monfeea. The principal rivers are the Jubb, Ozy, Lindy, and Rowoona. The year is divided into the wet and dry seasons, and in the former the country is subject to great inundations. The soil along the coast is fertile in rice, millet, peas, beans, melons, pumpkins, the sugar cane, cocoanut, banana, plantain, &c., and the forests supply the caoutchouc tree and many valuable species of timber. Cattle, sheep, and fowls are abundant. The elephant, rhinoceros, lion, leopard, several kinds of antelopes, hippopotamus, and crocodile are found; the rivers are well stocked with fish, and cowries are collected for exportation. The interior is understood to be well watered and fertile; it is occupied by tribes who are constantly at war with the inhabitants of the coast, the latter being foreign settlers. The principal native tribes are the Somaulis, Gallas, Dowlas, Wanyekas, and Sowhylis. A small part of the coast, together with the island of Zanzibar, is subject to the imam of Muscat. Rice, sugar, molasses, dried and salted fish, ivory, gums, and shields are exported to Arabia, and ivory, gold, cowries, and a few minor articles to Bombay; and the principal imports are dates, weapons, and Indian and British manufactures. A few Hindoo merchants are settled at Mombas.—The Portuguese planted colonies here in the 16th and 17th centuries, but afterward abandoned them; and the Arabs, who had already made their appearance in small numbers, subsequently became masters of the region on the sea, and still form an important element of the population of the large towns.

ZANTA, LAKE. See SCUTARI.

ZANTE (anc. *Zacynthus*), one of the Ionian islands, situated 15 m. W. of the Morea and 10 m. S. of Cephalonia, about 20 m. long and 6 broad; area, 165 sq. m.; pop. in 1861, 45,000. It is the third in extent, but the first in fertility and productiveness, of the Ionian isles. It consists mainly of a plain covered with vineyards of the small grapes which when dried are known in common as "Zante currants," or "raisins of Corinth." They are peculiar to Zante and Cephalonia, and form their leading article of export. Olive oil, though produced in considerable quantity, is less abundant here than in Corfu. A moderate quantity of good wine is made. The manufactures consist of white and blue cottonades for heavy wear, silk stuffs, handkerchiefs and scarfs, horse hair cloths, soap, bricks, tiles, &c. According to Thucydides, Zacynthus was originally settled by Achæans from Peloponnesus, and early attained importance, its people being said to have founded Saguntum in Spain 200 years before the Trojan war. It was generally an ally of Athens until after the Peloponnesian war, when it seems to have fallen under the dominion of Sparta. It formed part of the possessions of Philip V. of Macedon, who surrendered it to the Romans in 191 B. C. It afterward shared the fate of the other Ionian islands, now belonging to Great Britain.—ZANTE, the capital, and the largest town of the Ionian isles, is situated on the E. coast; pop. in 1861, 20,000. Its houses are mainly in the Italian style, and the city is a pleasant resort for visitors and tourists. The harbor is large, and the best in the island group except that of Corfu. It is protected by a mole, at the extremity of which is a lighthouse. The city has a number of handsome churches, a custom house, an arsenal, a theatre, a bank, a lazaretto, and a citadel. In a marsh about 12 m. S. are extensive petroleum wells, which have been known since the time of Herodotus. They yield 3 or 4 barrels daily of a thick resinous petroleum. In a small cave near the sea shore an unctuous matter drips from the walls (probably a more liquid rock oil), which, running into the water, gives the cave the name of the "tallow well."

ZANZIBAR, or UGUJA, an island on the E. coast of Africa, extending from lat. 5° 40′ to 6° 30′ S.; extreme length 52 m., breadth 18 m.;

area, 700 sq. m.; pop. about 200,000. The strait by which it is separated from the mainland of Zanguebar is about 25 m. wide, and is only navigable close to the island, being occupied in other places by coral reefs and islets. The only towns of importance are the capital, of the same name, and Uzi, or Uguja-uea, on the opposite side of the island. Zanzibar is surrounded by coral reefs, which lie about 1 to 2 m. from the shore, and is itself of coral formation. The W. shore is low, and indented by numerous small inlets; the E. presents cliffs of coral rock about 30 feet above the level of the sea; no part of the island exceeds 250 feet in height. The surface is undulating, and the soil is exceedingly fertile, being formed of decomposed vegetable matter with a small substratum of guano. The island is watered by numerous small streams. The climate is hot, oppressive, and enervating, and generally considered unhealthy. Rice, millet, and various kinds of tropical vegetables are cultivated; and the sugar cane, mango, banana, plantain, pineapple, and many other tropical fruits grow with great luxuriance. Several species of palms, the cotton tree, and the copal tree grow wild. The clove, cinnamon, and nutmeg trees, pepper, coffee, cotton, and sorghum have been introduced and are extensively cultivated. There are but few wild animals on the island, but all the domestic species have been introduced. The horned cattle are of the hunched breed of India, and are small; but the ass is large and handsome, and is the principal beast of burden. Horses and camels are not numerous.—In 1840 Said Seid, the imam of Muscat, removed his court from the capital of Oman to Zanzibar, and upon his death in 1856 his son Said Majed succeeded him under the title of "sultan of Zanzibar and the Sawahil," as ruler of the island and the other possessions on the coast of Africa. (See MUSCAT.)—ZANZIBAR, UGUJA, or BELED-ZANZIBAR, the capital, is situated on the W. side of the island, in lat. 6° 10′ S., long. 39° 14′ E.; pop. about 30,000. It is built upon a sandy peninsula, and has a fine appearance from the harbor. The different races have separate quarters assigned them. The houses of the blacks are mostly constructed of bamboos covered with palm leaves. There are 8 or 10 mosques. A large proportion of the population are slaves, and 19,000 slaves were imported through the custom house in 1859–'60, 4,000 of whom were from the opposite coast, while the remainder were brought by the caravans from the lake regions of Africa. A great deal of the trade of Zanzibar is in the hands of natives of British India. These people alone held 4,500 slaves, who were lately set at liberty by order of the British government. In 1859 the exports included 438,600 lbs. of ivory, valued at $723,330; 875,875 of gum copal, valued at $185,830; and 4,860,100 of cloves, valued at $278,330. Beside these items, hippopotamus teeth, rhinoceros horns, hides, goat and sheep skins, inferior kinds of gum, sugar and coffee, dates, pepper, tortoise shell, and myrrh are also articles of export. The principal imports are piece goods, hardware, cutlery, arms, ammunition, soap, brass wire, and grain. During the year ending Sept. 30, 1858, 32 vessels under the flag of the United States arrived at the port, with cargoes valued in the aggregate at $1,022,471, and cleared with cargoes valued at $875,964; but of the latter amount $674,114 was made up of parts of original cargoes.

ZAPATA, a new S. W. co. of Texas, bounded W. by the Rio Grande, which separates it from the Mexican states of Coahuila and New Leon; area, about 2,500 sq. m.; pop. in 1860, 1,248, all of whom were free. The surface is level or undulating, with hills in the N. part, and the soil is generally fertile. Capital, Bellville.

ZÁPOLYA. See HUNGARY, vol. ix. p. 358.

ZARA (anc. *Jadera*), the capital of Dalmatia, situated on a promontory of the Adriatic extending into the gulf of Zara; pop. 7,000. It is strongly fortified, and has a spacious harbor, but is exposed to the sirocco and bora. It has a cathedral, 5 churches including St. Simon's, with the relics of the saint preserved in a glass coffin, an arsenal, a museum of art and antiquities, a theatre, various schools, &c. Maraschino and rosoglio, leather, silk, and linen are manufactured. There are no wells, and the people drink rain water. There are remains of an aqueduct built by Trajan.

ZARATE. See GIL Y ZARATE.

ZARLINO, GIUSEPPE, an Italian composer, born at Chioggia in 1520, died in 1590. He was noted for the music he composed to be performed in the church of St. Mark at Venice on occasion of the victory of Lepanto. He determined the relations of the tones and semitones more precisely than had previously been done, and on this subject wrote *Instituzioni armoniche* (Venice, 1562 and 1573). His other works were collected in 6 volumes (1580).

ZAVOLA, a new S. W. co. of Texas, drained by the Nueces river and the Rio Leoni; area, about 1,200 sq. m.; pop. in 1860, 26, of whom none were slaves. The surface is level, and the soil fertile and well adapted to the production of Indian corn, sweet potatoes, cotton, &c.

ZEA, DON FRANCISCO ANTONIO, a South American patriot, born in Medellin, in the province of Antioquia, New Granada, Oct. 20, 1770, died in Bath, England, Nov. 28, 1822. After completing his education at Bogota, he was employed on a government survey of the vegetable resources of the country. In 1794 he was arrested for participating in certain movements which aimed at the independence of New Granada, and in 1797 was taken to Spain for trial. He was confined in a fort at Cadiz until 1799, when he was permitted to go to France. In 1802 he returned to Spain, and became an assistant director in the botanic garden of Madrid, and subsequently professor of botany and director in chief. After the revolution of Aranjuez, he was elected a member of the junta of Bayonne (1808), and for some time during the reign of Joseph Bonaparte was minister of the interior and governor of Malaga. On the expulsion of the French he went to England, whence in 1814 he embarked for South America and joined Bolivar, who was then about to march against the Spaniards of Venezuela. He was made commissary-general of the army of the republic, and at the meeting of the congress of Venezuela in Feb. 1819, was elected vice-president; but in August he resigned this office on account of his health. By a commission dated Sept. 24, 1819, he was appointed envoy extraordinary and minister plenipotentiary to all courts in Europe to which he might choose to present himself. In 1820 he consequently appeared in Europe, and after having in vain negotiated with the Spanish cortes for a peace, and with other European powers for a recognition of the republic of Colombia, he succeeded in obtaining from English bankers a loan to the amount of £2,000,000 in March, 1822. The terms of the loan were not very favorable to the new republic, and were censured by the Colombian congress; but as the powers of the ambassador were unlimited, it was confirmed and recognized.

ZEALAND, or ZEELAND, a province of Holland, lying in and around the delta of the Scheldt, bounded N. by the province of South Holland, E. by North Brabant, S. E. and S. by Belgium, and W. by the North sea; area, 642 sq. m.; pop. in 1859, 165,638. Beside the mainland S. of the W. Scheldt, Zealand comprises the islands of Walcheren, N. and S. Beveland, Tholen, Duiveland, and Schouwen. The surface is very little above the level of the sea, and is protected from inundation by massive dikes. The soil is fertile, and large quantities of grain, clover, rapeseed, and fruit are raised. The islands also afford good pasturage to cattle and sheep, of which great numbers are raised for market. Butter, madder, potatoes, hemp, and turnips are the other principal products. The climate is moist, windy, and unhealthy, epidemic fevers prevailing, though the draining and filling up of the marshes have improved its salubrity. The principal towns are Middelburg, the capital, on the island of Walcheren, Flushing or Vlissingen, St. Goes, and Zierikzee. The manufactures of the province are linen goods, gin, ale, and tiles; salt refining and ship building are extensively prosecuted. Since 1854 large tracts of land have been reclaimed from the sea.

ZEALAND, or ZEELAND (Denmark). See SEELAND.

ZEALAND, NEW. See NEW ZEALAND.

ZEBRA, the common name of the striped horse-like animals of South Africa, of which one has been described under QUAGGA. They come nearer the ass than the horse, having the tail furnished with long hairs only at the tip, and the hind legs without warts, and have accordingly been placed by Gray in his genus *asinus;* they are of a whitish or pale brown color, elegantly striped with broad black bands. The best known and the handsomest is the common zebra (*equus zebra*, Linn.), rather smaller than the wild horse, which name it bears among the Dutch colonists at the Cape of Good Hope; it is a mountain species, inhabiting S. Africa, and the bands exist on all parts of the body and limbs, even to the hoofs. The zebras are very wild, living together in herds, going with great rapidity from place to place, as impelled by hunger or fear; they seek the most secluded spots, grazing on the steep hillsides, posting a sentinel at whose warning of danger they scamper off with pricked ears and whisking tails to inaccessible retreats in the mountains; the senses of sight, smell, and hearing are remarkably acute, and their speed is very great; when attacked by man or beast, they form a compact body, with their heads in the centre and their heels toward the enemy, bravely defending themselves against the large carnivora by their showers of kicks. They have been so domesticated as to be used as beasts of burden, but, having been subdued by cruel usage, show little of the spirit of the wild state; if treated with gentleness and kindness, this and the other species could doubtless be rendered serviceable to man; the flesh is eaten by the natives and hunters in South Africa, and is said to be exceedingly good, though coarse, as in all of the horse family.—There is another species (*E. Burchelii*, Fisch.), the *dauw* of the Hottentots, the *peetsi* or *peechi* of the more northern Africans, and the *hippotigris* of the ancients, which occurs as far north as Abyssinia; this, with the quagga, inhabits the plains, and like it has no black bands on the limbs; in the ears and tail, and the symmetry of its form, it resembles the horse more than the common zebra does; its voice is a shrill, abrupt neigh, wholly unlike the bray of an ass. This is the species subjected in London to Mr. Rarey's method of subjugation; like the others, it has the mane short and erect.—The common zebra will cross in captivity with the ass and with the horse, as appears from the experiments of Geoffroy St. Hilaire and F. Cuvier in vols. vii., ix., and xi. of the *Annales du muséum d'histoire naturelle* (Paris, 1806–'8).

ZEBU (*bos Indicus*, Linn.), the Brahmin bull, a variety of the domesticated ox, characterized by a large fatty hump on the shoulders. It is found in India and its archipelago, China, Arabia, Persia, and on the E. coast of Africa. This variety is of very small size, sometimes not exceeding a large dog in height; the ears are long and pendulous, and the horns sometimes absent. They are held sacred by the Hindoos, who consider it a sin to kill them; they are allowed great liberties, and help themselves to whatever eatables they fancy in the streets, markets, and courtyards; they are made to work, however, and harnessed to a carriage will travel 30 miles a day; the hump is considered by the English residents in India delicious eating. It is forbidden to take the bulls out of the country; but a female brought to

America, and for a year past publicly exhibited in Boston (1861-'2), had a male calf on the passage, which is also in good condition in the same place; these specimens have small horns; the female is about the size of a year-old heifer, but with shorter legs, and is of a mixed mouse and hoary gray color, very gentle, and with remarkably soft hair; the male is brown, with coarser hair, and less gentle. The cattle of the Dutch East Indian colonists are mostly of this race, of larger size, and considerably crossed with the Sunda ox (*bos Sondaicus*, S. Müll.).

ZEBU ISLAND. See CEBU.

ZECHARIAH, or ZACHARIAH, the eleventh in order of the 12 minor prophets, who returned from Babylon with Zerubbabel, and began to prophesy in the 2d year of Darius, king of Persia (B. C. 520), two months after Haggai. The book of Zechariah consists of 4 general divisions: 1, the introduction or inaugural discourse (ch i. 1-16); 2, a series of 9 visions, extending to ch. vii., communicated to the prophet in the 3d month after his installation; 3, a collection of 4 oracles delivered at various times in the 4th year of Darius, with regard to the solemnities that had been observed on account of the overthrow of the nation (ch. vii.); 4, the following chapters (viii. to xiv.) contain a variety of prophecies, unfolding the fortunes of the people, and the fate of many of the surrounding nations, Hadrach (by some supposed to designate Persia), Damascus, Tyre, and Philistia. The book concludes with a vision of the prosperity of Jerusalem, the theocratic metropolis. Zechariah is the longest and most obscure of the minor prophets. His style is broken and unconnected. The genuineness of the latter portion of Zechariah, from ch. ix. to xv., has been disputed in modern times by Hitzig, Knobel, John Pye Smith, and Davidson, while it has been defended by Koster, Hengstenberg, Kliefoth, Blayney, and Forberg. Special commentaries on Zechariah have been written by Forberg (1824), Howard (1824), Baumgarten (1860), and Kliefoth (1862).

ZECCHIN. See SEQUIN.

ZEDEKIAH. See HEBREWS, vol. ix. p. 35.

ZEELAND. See ZEALAND.

ZEISBERGER, DAVID, a Moravian missionary among the American Indians, born at Zanchtenthal, in Moravia, April 11, 1721, died at Goshen, Tuscarawas co., Ohio, Nov. 17, 1808. His parents emigrated to America during his youth, leaving him to be educated by the Moravians in Saxony. Having completed his studies, he went to Holland, and lived in a Moravian settlement called Nerrendyk. Being harshly treated by his superiors, he escaped from them, and found his way to England. There Gen. Oglethorpe provided for his wants, and enabled him to join his parents in Georgia. In 1740 he went to Pennsylvania, and was one of the founders of the town of Bethlehem. Soon afterward he became a missionary to the Indians, and in 1745 was arrested as a spy of the French by the colonial government of New York, but after 7 weeks' incarceration was released by Gov. Clinton, and labored until the breaking out of the Indian war in 1755 among the Delawares at Shamokin (Sunbury, Penn.), and the Iroquois at Onondaga. In the time of the Pontiac conspiracy, he assisted in ministering to the Christian Indians for whom the governor of Pennsylvania had provided a refuge in the barracks at Philadelphia. Peace having been concluded, he led the remnant of these Indians to Wyalusing, on the Susquehanna, in Bradford co., Penn. In 1767 he penetrated through the wilderness to Goshgoshunk, on the Alleghany, in Venango co., and established a church among the Monseys. Owing to the animosity of the unbelieving portion of the tribe, he removed with his flock in 1770 to the Beaver creek, and began another station, called Friedenstadt, in what is now Lawrence co. Two years later he explored the Muskingum region, in the present state of Ohio, and laid out an Indian town, Schoenbrunn, on the Tuscarawas, about 10 m. from the present Canal Dover, in Tuscarawas co. After a time he was joined by all the Moravian Indians of Pennsylvania, whom the march of civilization drove westward. Two more towns were built, a number of other missionaries entered the field, and many new converts were added. In 1781, at the instigation of the commandant of the British post at Detroit, the half king of the Wyandots, with a large body of warriors, fell upon the settlement of the Christian Indians, and forced them to remove to Sandusky. Zeisberger and his assistants were seized and grossly maltreated, and 96 Christian Indians of his flock, who had gone from Sandusky to the Tuscarawas, in order to gather their corn, were massacred by a party of colonial militia. This was a death blow to the Moravian mission among the Indians. Most of the converts dispersed; with a small remnant Zeisberger went to the Clinton river, and built an Indian town, in what is now the state of Michigan. In 1786, at the head of his little band, he journeyed back to Ohio, and in the following year commenced a new settlement, which he called New Salem, in Huron co., on the river of the same name, one mile from Lake Erie. He and his people now spent 4 years of rest, and the mission again began to thrive; but in 1791 the hostility of other Indians obliged them to emigrate to Canada, where they founded Fairfield, on the river Thames. In 1798, the U. S. congress having granted to the Moravian Indians the tract of land in Ohio upon which they had formerly been settled, Zeisberger returned to that country with some of his converts, and near the ruins of their once flourishing towns established a new station, to which he gave the name of Goshen. There he preached until the close of his life. His published works are: a Delaware and English spelling book (Philadelphia, 1776); a collection of hymns, in Delaware (Philadelphia, 1803); "Sermons to Children," in Delaware (Philadelphia, 1803);

a "Harmony of the Four Gospels," in Delaware (New York, 1821); and *Verbal-Biegungen der Chippewayer* (ought to read Delawares) in Vater's *Analekten der Sprachkunde* (Leipsic, 1821). Other important works of his relating to the Indian languages remain in manuscript; among the rest a Delaware grammar and dictionary, deposited in the library of Harvard university, and an Iroquois dictionary, deposited in the library of the American philosophical society at Philadelphia.

ZELLE. See CELLE.

ZELTER, KARL FRIEDRICH, a German composer, born in Berlin, Dec. 11, 1758, died there, May 15, 1832. The son of a mason, he was bred to his father's trade, and was forbidden to devote his leisure to music; but after his apprenticeship was completed in 1783, he left masonry altogether to study harmony and composition. In 1800 he became the head of Fasch's academy of singing, and in 1809 the king of Prussia appointed him professor of music in the Berlin academy of the arts and sciences, which office he held till his death. His compositions are mainly songs and motets. Mendelssohn-Bartholdy was one of his pupils. He was a friend of Goethe, his correspondence with whom was published after his death (6 vols., Berlin, 1833-'4).

ZEMINDAR, a farmer of imperial rents in Hindostan. The Mohammedan emperors of India parcelled out the provinces that were governed by their own lieutenants, or nabobs, into districts called *chaklas*, somewhat resembling our counties, which were let out to farmers, who paid a certain fixed sum into the treasury of the district, and retained the balance of what they could collect from the husbandmen. Their authority was extended from year to year during the monarch's pleasure. To prevent imposition on the poor, a register was kept open to the inspection of all, in which the rents of every village and farm were entered. The rents paid into the treasury amounted to about 50 per cent. of the sum collected by the zemindar, but out of the remainder he was expected to build houses for the husbandmen, furnish them with implements of agriculture, provide reservoirs and embankments, and in short to make all necessary improvements on the lands. If he exacted a heavier tax than the people could pay, he was turned out of office. In the districts of British India where this system of collecting the revenue is still continued, the zemindars have received permanent grants of their lands, and the tenants have no check upon their rapacity except what is supplied by the landlord's knowledge of his own interests.—Beside the general farmers of districts, there was another class known as zemindars, consisting of those who possessed estates, sometimes for life, and sometimes in perpetuity, free from taxation, by virtue of imperial grants.

ZEMLIN. See SEMLIN.

ZENAIDA DOVE. See PIGEON, vol. xiii. p. 319.

ZEND, the name usually applied to the language in which is written the *Avesta*, the Bible of the Zoroastrian religion. It originally and properly means the translation of that work into the Huzvaresh or Pehlevi language. (See PERSIAN LANGUAGES AND LITERATURE, and ZENDAVESTA.)

ZENDAVESTA, the scriptures of the Zoroastrian faith, the ancient national religion of Persia, now professed only by the scanty communities of Parsees settled in western India, in and about Bombay, and by a few families in Yezd and Kerman. As generally apprehended, the title is an unfortunate misnomer. The proper name of the Zoroastrian writings, composed in the ancient Persian language of northeastern Iran, is simply *Avesta*, while *Zend* means the translation of them into the mixed and half Semitic dialect of western Iran, made under and for the Sassanian monarchs, some centuries after the Christian era. Zendavesta, however, if understood to mean the Zend and the Avesta, or the Avesta and its Zend, is a suitable name for the whole Parsee sacred literature, ancient and modern, and will be here accepted as such. The Avesta is one of the most ancient and interesting documents remaining to us for the early history and religion of the Indo-European family. It was first introduced to European knowledge by Anquetil-Duperron, who in 1755 went to India and ingratiated himself with the Parsees on purpose to obtain possession and comprehension of their literature, and on his return published a French version of the whole of it, with various essays and a history of his travels (*Zend-Avesta, ouvrage de Zoroastre*, &c., 3 vols. 4to., Paris, 1771). This translation, however, has since been shown to be utterly untrustworthy. The true understanding of the text began with the labors of Burnouf (1829 *et seq.*), ably seconded by those of Bopp, Lassen, Benfey, Holtzmann, Roth, Brockhaus, Haug, &c., and of late especially continued by Westergaard and Spiegel. Westergaard has published (Copenhagen, 1852-'4) a complete text of the Avesta, and promises a dictionary, grammar, translation, critical and historical expositions, &c. Spiegel's contributions to our knowledge of the Parsee literature have been most extensive and various; of his edition, which includes both the Avesta and its Zend, two volumes out of three (*Vendidad*, 1852-'3; *Vispered* and *Yaçna*, 1858-'9) have appeared, along with translations into German, and considerable explanatory matter.—The Avesta is made up of several distinct parts. First in importance among these are the *Vendidad* and the *Yaçna*. The former is, as it were, the Pentateuch of the Zoroastrian canon, the book of origins and of the law. It is in great part prescriptive, a moral and ceremonial code, teaching the means of avoiding sin and impurity, or of expiating them when committed or incurred. It is cast chiefly in the form of colloquies between the supreme divinity, Ahura-Mazda (Ormuzd), and his servant and prophet

Zarathustra (Zoroaster), in which the former makes known to the latter his will respecting his creation. The same form prevails more or less through the whole Avesta; it is professedly a revelation to Zoroaster, and through him to mankind. The Vendidad is evidently not preserved complete, nor is it certain that its few first and last chapters originally belonged to it. The Yaçna is of a quite different character, being made up of prayers and praises addressed to the divinity and to the beings inferior to him whom the religion recognized as worthy of reverence and worship. It is divided into two distinct portions, of which the latter is written in a slightly different and apparently older dialect, and is in great part metrical, resembling in form and contents the hymns of the Hindoo Veda; these songs are plainly the most ancient and original part of the Avesta, and some of them may go back even to the time of Zoroaster himself; that they do so is the opinion of Dr. Haug, who has studied them more profoundly than any other scholar, and has published an annotated translation of them, in the German oriental society's collections (*Die fünf Gâthâs*, &c., Leipsic, 1858–'60). The *Vispered* is kindred in character with the more recent part of the Yaçna; these two, along with the Vendidad, are mingled together in the liturgical use of the Parsees. The other constituents of the Avesta are sometimes spoken of as the *Khordeh Avesta*, or shorter Avesta; they are the 24 *Yeshts*, laudations of sacred persons or objects, the 5 *Nyayish*, and a few other less important pieces. The Parsees hold that Zoroaster's writings originally filled 21 volumes, which were in great part lost in the ruin of the Persian empire and religion after Alexander, only fragments of them being recovered and preserved by the Sassanian monarch Ardeshir—excepting the Vendidad, which had been saved entire. There is doubtless much truth in this tradition, the Avesta being clearly an assemblage of fragments of a more extended literature, and many circumstances favoring the theory of its collection into its present form during the early part of the Sassanian period. Its material is of different ages, but to set its chronological limits is not possible; some of it must doubtless be many centuries older than our era. Its place of origin, as that of the Zoroastrian religion, must be the northeastern part of Iran, in or not far from Bactria, which is also the principal scene of action of the Persian legendary history.—The Zend, or literature auxiliary to and explanatory of the Avesta, consists chiefly of a translation of its text into Pehlevi, with accompanying glosses, and also one or two independent works in the same language, as the *Bundehesh*, of much later date. It is, when rightly understood and properly employed, an important aid, critical and exegetical, to the understanding of the Avesta; yet its interpretation is not to be implicitly accepted and relied upon. Its extent, character, value, &c., have been fully set forth by Spiegel in his *Einleitung in die traditionellen Schriften der Parsen* (8vo., Vienna, 1856–'60). That part of the Zoroastrian literature which is composed in the so called Parsee dialect, a somewhat older form of the modern Persian, is of still more modern date and limited extent. Glosses or interpretations of the Avestan texts, called *Pa-Zend*, versions of certain portions of them, sundry invocations and ascriptions of praise, expositions of Parsee doctrine, and a little theological treatise called the *Minokhired*, constitute nearly its whole substance. Nothing of it has been published except in the appendix to Spiegel's Parsee grammar.—Since the settlement of the Parsees in India, a Sanscrit version, by Neriosengh, of their sacred text has been made; it has been published in a Latin transliteration by Spiegel (Leipsic, 1861). Within the past few years, also, learned and enlightened Parsees have been active in editing and commenting their scriptures, and rendering them accessible in the present vernacular of their community, the Guzeratee language.

ZENITH (Arabic), that point in the heavens which is precisely over the head of the observer. The point directly opposite under his feet is called the nadir.

ZENO, a Greek philosopher, born at Elea, Magna Græcia, about 490 B. C. He was a pupil of Parmenides, and resided at Elea all his life with the exception of occasional visits to Athens, whither he went as a teacher, having Pericles and other wealthy men among his scholars. He was the first of the Eleatic school to write in prose, and Aristotle calls him the inventor of dialectics. He contended that there was in reality no such thing as motion. (See Eleatic School.) He died in consequence of a conspiracy in which he was engaged, against a tyrant of Elea named Nearchus or Diomedon. Being taken prisoner, he was called upon to denounce his accomplices, and in reply named all the personal friends of the tyrant, concluding with Nearchus himself, and then threw in his face his own tongue that he had just bitten off. He was put to death, according to some, by being stoned; according to others, by being brayed in a mortar. Of his numerous writings nothing remains.

ZENO, a Greek philosopher, founder of the stoic school, born at Citium in the isle of Cyprus about 362 B. C., died in Athens about 264 B. C. His father, named Mnaseas or Demeas, was a merchant, and for a time he followed the same profession, until, at about the age of 22 years, he lost a ship with a rich cargo by shipwreck at the entrance of the Piræus. Henceforth he devoted himself to philosophy, having already, according to one tradition, imbibed a passion for it from reading the writings of the Socratic school, which his father had brought home on one of his voyages from Athens. Another tradition, however, makes him conceive this passion from reading, while in Athens, the second book of Xenophon's

Memorabilia. At first he attached himself to Crates, but afterward sought the instructions of Stilpo, from whom he went to Diodorus Cronus, the great dialectician of the Megarean school, after which he followed the lectures of Xenocrates and Polemon, who had succeeded Plato at the academy. Having passed in these studies some 20 years, Zeno opened his own school, which took its name from being held under the Στοα Ποικιλη or painted porch. (See Stoics.) In order to avoid a crowd, he required the payment of a small sum from his disciples, among whom was the king Antigonus Gonatas, while Ptolemy Philadelphus ordered his ambassadors at Athens to take down the words of the philosopher that they might be reported to him. He was at the head of his school for 58 years, respected for the austerity of his life and the boldness of his language. So great was the confidence the Athenians reposed in him, that there is a story according to which they intrusted to him the keys of their citadel, and after his death, probably at the great age of 98 (apparently not by suicide, as has been sometimes reported), they decreed that by exciting the youth to wisdom and virtue and giving in his own life an example thereof, he had deserved well of the republic, wherefore they awarded to him a crown of gold and a public tomb in the Ceramicus. Of his writings only a few fragments and quotations at second hand remain, altogether insufficient to give any idea of the works from which they were taken.

ZENO, an emperor of the East, who reigned from A. D. 474 to 491. An Isaurian by birth, he married the daughter of Leo I., commanded the imperial guards and armies, and was elevated to the consulship in 469; procured the assassination of Aspar, the minister of Leo, in 471; usurped the crown on the death of Leo in 474, having as his colleague his own son Leo II., who died in that year; saw the Goths encamped under the walls of Constantinople; was driven out of his capital by Basiliscus, who was proclaimed emperor in 475, but regained Constantinople in 477 by buying over Harmatius, the nephew and general of Basiliscus, who was deposed and died shortly afterward. Zeno now gave himself up to pleasure, while the government was carried on by Illus, sole consul and minister. In 478 a Gothic invasion was bought off; in 479 a revolt in Constantinople was put down by corrupting the troops engaged; a second Gothic invasion was bought off, and a third was repelled by purchasing the aid of an opposing party among the Goths, one of whose chieftains, afterward Theodoric the Great, was made consul in 484, after which Illus revolted, was defeated, and put to death in 488. Having quarrelled with Theodoric, Zeno, anxious to save himself and his capital, proposed to him to invade Italy, and expel Odoacer and the Heruli; and accordingly the last years of this emperor witnessed the foundation of a Gothic kingdom in that country. He left no children, and was succeeded by Anastasius.

ZENO, Apostolo, an Italian poet, born in Venice, Dec. 11, 1668, died there, Nov. 11, 1750. He wrote many successful dramas and furnished librettos for several operas; founded in 1710 the *Giornale de' letterati d'Italia*, which still exists; went to Vienna in 1715 on the invitation of Charles VI., and was appointed court poet, which office he held till 1729, when he resigned it on account of his age and returned to Venice on a pension. His dramatic works were published in 1744 (10 vols., Venice) and in 1795 (12 vols., Turin). He also wrote *Istorici delle cose Veneziane* (10 vols., Venice, 1718-'22); *Dissertazioni istorico-critiche e letterarie agli istorici Italiani* (2 vols., Venice 1752-'3); and *Epistole* (6 vols., 2d ed., 1785).

ZENO, Nicolo and Antonio, Venetian navigators of the 15th century, who having visited England and an island named Friseland, supposed to have been one of the Faröe islands, heard of a country named Estotiland, 1,000 m. west, inhabited by civilized people, and another country named Droceo S. of it, inhabited by savages, with still a third country further south where the people were rich, lived in cities, and sacrificed human victims to idols. Antonio Zeno sailed in search of these regions, discovered an island named Icaria, and was driven by a storm to Greenland, whence he returned to Europe. His story was first published in Venice in 1588.

ZENOBIA, Septimia, queen of Palmyra. She was the daughter of an Arab chief, and had by her first husband a son named Athenodorus Waballath, whom she is said to have invested with the purple when she attained to power. Her second husband was Septimius Odenathus, prince of Palmyra, who after the surrender of the emperor Valerian to Sapor, king of Persia, pursued and twice defeated the latter, was afterward associated by Gallienus in the government of the empire with the title of Augustus, and was assassinated in A. D. 266 by his nephew Mæonius. Zenobia, who has been accused, perhaps unjustly, of being accessory to the murder, put the assassin to death, and assumed the vacant throne. For 5 years she governed Palmyra, Syria, and the East with vigor and judgment, independent of the Roman power, and compelled one of the Roman generals sent against her to retreat with loss into Europe. She assumed the title of queen of the East, and exacted from her subjects the same adoration that was paid to the Persian monarchs. She maintained her power through the reigns of Gallienus and Claudius, but in 270 Aurelian defeated her in two pitched battles, one at Antioch, the other at Emesa, when she shut herself up in Palmyra, and prepared for a vigorous defence. "The Roman people," said Aurelian, "speak with contempt of the war which I am waging against a woman. They are ignorant both of the character and power of Zenobia. It is impossible to enumerate her warlike preparations of stones, of arrows, and of every species of missile weapons. Every part of the wall is provided with two or three *balistæ*, and artificial fires are thrown from her military engines. The fear of punishment has armed her with a desperate courage." To an advantageous capitulation offered by Aurelian, Zenobia returned an insulting refusal, confiding in her eastern allies, and in the famine she trusted would assail the Romans. Disappointed in both, she prepared to fly, but was captured after reaching the Euphrates, 60 miles from Palmyra. To the demand of Aurelian why she had taken up arms against the emperors, she replied: "Because I disdained to consider as Roman emperors an Aureolus or a Gallienus; you alone I acknowledge as my conqueror and my sovereign." Her firmness, however, afterward deserted her, and she sacrificed her ministers, one of whom was Longinus, to the resentment of Aurelian. She adorned the triumph of the emperor, but was presented by him with an elegant villa at Tibur, where she passed the rest of her life as a Roman matron. Her daughters married into noble Roman families, and her descendants were still living in the 5th century. Zenobia was exceedingly beautiful in person. Her complexion was dark, her eyes large, black, and fiery, and her voice strong and clear. She was acquainted with the Latin, Greek, Syriac, and Egyptian languages, and wrote for her own use an epitome of oriental history. She was a passionate lover of the chase, was thoroughly inured to fatigue, sometimes walking on foot at the head of her troops, generally riding on horseback, and, though temperate, would sometimes drink with her generals. Her surviving son went to Armenia, where the emperor granted him a small principality.

ZEOLITE (Gr. *ζεω*, to boil), the name given to a family of minerals, of which, though in some respects unlike, a common characteristic is that they melt and intumesce in the flame of the blowpipe. They consist chiefly of silica, alumina, some alkali, and more or less water; the latter two account for their dissolution under heat. Most of them also gelatinize in acids, by separation in such state of the silica. As found, they fill cavities or form narrow seams in rocks, are implanted on their surface, or more rarely imbedded in them; but are never, like agates, disseminated throughout the rock. They all occur in amygdaloid, some of them in granite or gneiss. Among them are heulandite, laumonite, natrolite, stellite, analcime, sodalite, lapis lazuli, &c. (See Lapis Lazuli, and Laumonite.)

ZEPHANIAH, one of the 12 minor prophets, who prophesied in the reign of King Josiah from 630 to 624 B. C. Of his actions and the time of his death we have no exact knowledge. His prophecy consists of 3 chapters. The 1st is a general threatening against all the people whom the Lord had appointed to slaughter, and in particular against Judah and the Philistines. In the 2d he inveighs against Moab, Ammon, Cush, the Phœnicians, and the Assyrians, and foretells the fall of Nineveh. The 3d contains invectives and threatenings against Jerusalem, but afterward gives comfortable assurance of a return from captivity.

ZEPHYR, in Greek mythology, the personification of the west wind. According to the Hesiodic theogony, he was the son of Astræus and Eos. The Greek name signifies life-bringing, as the time at which that wind begins to blow marks the revival of vegetation. He is represented as a youth beautiful and naked, with a wreath on his head, or carrying flowers in the fold of his mantle.

ZEPHYRANTHES, the generic name of some American liliaceous plants conspicuous for the beauty of their flowers. The Atamasco lily (*Z. Atamasco*, Herbert) is found in the rich damp soil of Virginia, and extends southward to Florida. The root is a small brown bulb sending up long, dark green, channelled leaves, and a scape supporting a sheath (spathe) at the summit, from which issue 2 or 3 flowers of considerable size, consisting of a perianth of 6 petal-like and similar divisions, the stamens 6 with versatile anthers, the pod membranous and 3-lobed. On first expanding, the flowers are of a fine rose color, but fade away to a pale flesh color or pure white. The treatment of the plant in cultivation is easy, requiring during winter a dry and warm condition, but when growing abundance of water. There are other species indigenous to South America, of similar beauty.

ZERAM. See Ceram.

ZETLAND. See Shetland Islands.

ZETTERSTEDT, Johann Wilhelm, a Swedish naturalist, born in Miölby, in the province of East Gothland, May 20, 1785. He became teacher of botany at the university of Lund in 1810, and assistant professor of natural history in 1812. He made several scientific journeys through northern Europe, devoting his attention especially to entomology. In 1839 he was made professor of botany and economy at Lund, and during 1846–'7 was rector. Beside accounts of his travels, he has published many valuable works on botany and entomology.

ZETTINJE, or Zettinie. See Cettigne.

ZEUGLODON (Gr. *ζευγλη*, a yoke, and *οδους*, a tooth), a gigantic fossil cetacean mammal, found in the eocene and miocene tertiary strata of the southern United States and Europe, so named by Owen from the yoke-like character displayed by a section of the molar teeth. Its remains were first discovered in 1832 in the tertiary of Louisiana, and were supposed to belong to some huge saurian reptile, to which Dr. Harlan gave the name of *basilosaurus;* he carried the bones to London in 1839, where Owen showed by microscopic examination of the teeth, and the fact that the molars were double-rooted and implanted in double sockets, that it was not a reptile but a mammal, and belonged among cetaceans somewhere near the manatee and dugong. In 1835 Prof. Agassiz established the genus *phocodon*, from the examination of a tooth in the museum of Cambridge, England, regarding its possessor as nearly allied to the seal family; this was the very specimen figured by Scilla in 1747, in his work *De Corporibus Marinis*, and was obtained from the miocene of Malta; if *phocodon* be a synonyme of *zeuglodon*, the former has a priority of 4 years over the latter, and according to the rules of scientific nomenclature should be adopted, and with the more reason as the animal in question bears affinities to the seals in more respects than in the form of the teeth. In 1840 M. Grateloup described the fragment of an upper jaw with teeth found in the eocene of France, a few leagues south of Bordeaux, which he believed to characterize a new order of amphibious reptiles, carnivorous and marine, perhaps a connecting link between the lacertians and the sharks, and for which he proposed the name of *squalodon*. In 1845 Dr. R. W. Gibbes described some teeth which he referred to a genus which he called *dorudon*, now recognized as belonging to the zeuglodon. The materials for the study of this animal have been extensively collected, though its exact position in the scale of mammals is not established beyond dispute. In 1843 Mr. Buckley found a considerable series of bones of zeuglodon in Clark co., Ala.; they consisted of a chain of 40 vertebræ, with a portion of the skull and lower jaw, a perfect humerus, and a few other bones, measuring in total length about 70 feet; some of the vertebræ are 18 inches long and 12 in diameter on the articulating surfaces, and many are nearly perfect; it belongs to the collection of the late Dr. J. C. Warren of Boston. About the same time Mr. Koch, a German collector, obtained from the marly limestone of Alabama a considerable quantity of these bones, which were put together without order, embracing parts of different skeletons, and exhibited in most of the northern cities as the *hydrarchus Sillimani*, or great marine serpent; for an exposure of the deception here practised see Prof. J. Wyman's paper in the "Proceedings of the Boston Society of Natural History," vol. ii. (Nov. 1845); this collection, which made an animal 114 feet long, and might easily have been made 300 by a little more search after bones, was carried to Dresden, and there described by Carus as a reptile, though Burmeister and Müller maintained that it belonged to a mammal. In 1848 Mr. Koch returned to the United States and made another large collection, which was exhibited in this country and in Europe. There is a specimen in the Boston society of natural history, containing 36 vertebræ, and 26 fragments of ribs and other bones. From all these sources it is known that the cranium was much elongated, and narrowed behind the frontal bones; the occipital region much and steeply elevated, as in the hog; frontals very wide above the orbits; face slender, with elongated nasal bones, and normal nasal openings unlike those of the true cetaceans; intermaxillaries long and slender, and the lower jaw resembling that of the dolphins and sperm whales; the occipital condyles are 2 as in mammals, and the squamous cranial sutures and bones of the ear as in cetaceans. The cervical vertebræ are very short; the dorsals elongated, with small spinous and transverse processes, the former consolidated to the cylindrical bodies, but not contiguous; their epiphyses are several inches thick, whereas in the cetaceans in bones of equal size they form plates not more than half an inch thick; the bodies of the caudal vertebræ are very long; the ribs are short, of a dense laminated structure, somewhat thickened at the lower extremity, as in the herbivorous cetaceans; bones of arm small, the distal end of the humerus being suddenly contracted, and having the articulating surface of a hinge-like joint. The form was probably cetacean, though slender, elongated, and more snake-like, with small anterior limbs in the shape of paddles, and no posterior extremities; from the long chain and characters of the vertebræ, and the shortness of the ribs, as figured by Pictet, it would seem that the spinal column must have been freely movable in its several parts, presenting no anatomical impossibility to its performing the part of a tertiary and perhaps modern sea serpent; for the relations in the last connection, see SEA SERPENT. The dentition is peculiar; in the largest and best known species (*zeuglodon cetoides*, Owen) the formula is: incisors $\frac{3-3}{4-4}$, abnormal canines $\frac{1-1}{0-0}$, and molars $\frac{5-5}{5-5} = 36$; the anterior teeth are conical, the molars being compressed, serrated on the edges, and double-rooted; the interval between the long roots of the molars is continued by a marked depression on the sides of the crown, so that when the teeth are much worn each presents 2 surfaces united by a thin connecting substance, whence the name given by Owen; the prior name of *phocodon* of Agassiz is just as proper on account of the serrations of the cutting edges, like those seen in many seals, to which family some authors have approximated it. The dentition of the zeuglodon and the nasal openings prove that it was not a true or typical cetacean, and the molars and shape of the head also remove it from the dugong and manatee; yet the affinities seem nearer to these aquatic types than to any other. In the mode of completion and succession of the teeth, according to Owen, it belongs to a higher type than that of any of the existing carnivorous cetaceans; he therefore regards it as an interesting link between these (sperm whale, dolphin, &c.) and the sirenoids (dugong and manatee), the latter being more nearly related to the pachyderms.—For fuller details and plates, beside the works quoted, see "Journal of the Academy of Natural Sciences of Philadelphia," 2d series, vol. i. (1847), pp. 5–17, including papers by Messrs. Gibbes and Tuomey. Several species of the genus are described.

ZEUS. See JUPITER.

ZEUXIS, a Greek painter, born probably in Heraclea on the Euxine, about 450 B. C., died in the first half of the following century. The precise period in which he flourished rests upon conjecture only, but he was undoubtedly a contemporary of Apollodorus of Athens and of Parrhasius, intervening in point of time between these masters, and was one of the leaders of the Asiatic or Ionic school of painting, which succeeded the Athenian school. His peculiar excellences consisted in a grand style, great mastery of form, acquired doubtless from contemplating the sculptures of Phidias at Athens, effective coloring and chiaroscuro, and a dramatic effect of composition, with which was combined felicity in the choice of subjects. He also exhibited to perfection that accuracy of imitation and skill in depicting sensual charms which formed the chief characteristics of his school. On the other hand, according to Aristotle, he failed to present character in such a manner as to elevate the feelings and moral sentiments of the spectator, excelling rather in expressing the ideal standard of human beauty, or in imitating such natural objects as are incapable of an ideal representation. His most celebrated work was his Helen, painted for the city of Croton, and which was esteemed one of the masterpieces of antiquity. It was designed, it is said, after 5 of the most beautiful virgins of Croton, and continued for many ages to be visited by artists as the recognized type of female beauty. Among other famous works by him were a Hercules strangling the serpents, which he presented to the Agrigentines, Jupiter in the assembly of the gods, a Penelope, a Marsyas, a Cupid crowned with roses, and a family of centaurs graphically described and praised by Lucian, who calls Zeuxis the greatest painter of his time. Late in life he had a contest with his young rival Parrhasius for the preëminence in their art. Zeuxis painted some grapes with such exactness as to deceive the birds, which pecked at them; but Parrhasius, by a representation of a curtain which apparently concealed his picture, deceived Zeuxis himself, and was adjudged the better painter. At another time Zeuxis painted a boy carrying grapes, at which the birds also flew; but in this instance the artist was displeased at his success, remarking that if the boy had been as well painted as the grapes the birds would have feared to approach the picture. These anecdotes have little value except as indications of the estimate placed by the ancients upon the imitative faculty of the painter. A great portion of the life of Zeuxis was passed in Ephesus, where probably most of his works were executed, but he also painted in Macedonia, in Athens, and in the Greek colonies of Italy.

ZHUKOFFSKY, Vasili Andreevitch, a Russian poet, born in Mishensky, in the government of Penza, Jan. 29 (O. S.), 1783, died in Baden, April 12, 1852. A translation of Gray's "Elegy" (1802) was the first production which gave him any reputation. In 1808–'9 he edited the *Viestnik Evropi*, then the leading periodical of Russia. In 1812 he participated in the campaign against the French as lieutenant of Moscow volunteers, but rendered the most effective service by a series of war songs, which were published under the title of "The Minstrel in the Camp." Retiring from the service in 1813 on account of illness, he was presented by the emperor Alexander with a pension of 4,000 rubles. His principal productions are translations or imitations. One of his ballads (which species of poem he first introduced into Russian literature), entitled *Svietlana*, is regarded as the best of his works. He instructed the wife of the grand duke Nicholas in the Russian language, and afterward became the preceptor of his son, the present emperor Alexander. The later years of Zhukoffsky's life were spent in Germany. An edition of his works was published in St. Petersburg in 1835–'7, in 8 vols. 8vo., and 3 additional volumes appeared in 1849. One of these consists of prose, in which department the tale of *Marina Roshtcha* is deemed his best production. Some of his poems have been translated into English by Sir John Bowring.

ZIEGENBALG, Bartholomew, a German missionary, born in Pulsnitz, Upper Lusatia, June 14, 1683, died in India, Feb. 23, 1719. He studied theology and biblical literature at Halle, and in 1705 was ordained at Copenhagen and sailed for India. On his arrival at Tranquebar in July, 1706, the Danish authorities imprisoned him, and would not allow him to complete a translation of the New Testament into the Malabar language, which he had commenced. The home government, however, interposed, and large contributions being made for his support in England and Germany, he was allowed in 1711 to visit Madras and the territories of the Mogul. In Oct. 1714, he sailed for Europe, and completed and printed his dictionary of the Malabar language at Halle in 1716. After visiting Copenhagen and England, he returned to India, and was engaged on a missionary tour when he died of cholera. Beside the dictionary already mentioned, he was the author of *Grammatica Damulica* (Halle, 1716); *Explicatio Doctrinæ Christianæ Damulice* (1719); and *Biblia Damulica* (1723).

ZIETHEN, Hans Joachim von, a Prussian general, born at Wustrau, Brandenburg, May 18, 1699, died in Berlin, Jan. 26, 1786. He entered the service at the age of 15, but resigned after a few years; in 1726 was appointed 1st lieutenant of dragoons, got into trouble, and was cashiered. In 1730 he was appointed in a regiment of hussars, of which he became colonel in the course of the first Silesian war, and soon after the beginning of the second he was a major-general. He distinguished himself especially at Jägerndorf, Hohenfriedberg, and Hennersdorf, where he was wounded. In the 7 years' war he was made a lieutenant-general, and afterward a general of cavalry, fought in nearly all the battles, and gained great glory, especially at Reichenberg, Prague, Kollin, Leuthen, Liegnitz, and Torgau. No other general of Frederic the Great served him so well, or was so much the object of his favor. Ziethen married for the second time at the age of 65, and had a son, whom Frederic made a cornet while yet an infant. His statue by Schadow stands in the Wilhelmsplatz in Berlin.—HANS ERNST KARL VON, count, born March 5, 1770, died at Warmbrunn, Silesia, May 3, 1848, served in 1806 in a Prussian dragoon regiment, was made a major-general in 1813 and a lieutenant-general in 1815, fought at Ligny, and led the corps whose appearance on the field of Waterloo decided the action and put the French to flight. After the peace of Paris he commanded the Prussian army of occupation in France, was made a count, and in 1833, on retiring from active service, was created a field marshal.

ZILLI. See CILLY.

ZIMMERMANN, CLEMENS, a German painter, born in Düsseldorf, Nov. 4, 1788. He was educated at Düsseldorf and Munich, and first attracted attention by a picture of the "Sacrifice of Noah." In 1815 he became director of the gallery at Augsburg, and in 1825 professor of painting at the academy in Munich. He was one of the artists employed to decorate the Glyptothek, the Pinakothek, and other public buildings, and had charge of the execution in fresco of the designs of Cornelius in the corridors of the Pinakothek. He has also executed for the dining hall of the royal palace a series of subjects from Anacreon, after a process invented by himself, which combines encaustic with oil painting. One of his most important single works, a colossal "Assumption of the Virgin," is in a church in Australia. He is now (1862) director of the central gallery in Munich.

ZIMMERMANN, EBERHARD AUGUST WILHELM, a German author, born in Uebzar, Hanover, Aug. 17, 1743, died June 4, 1815. He was educated at the universities of Göttingen and Leyden, at the latter of which he conceived the idea, subsequently kept in view in all his writings, of dividing the animal kingdom with reference to climates, and of directing his attention to the migrations and ramifications of races, beginning with man himself. In 1766 he was appointed professor of physics at the Caroline college in Brunswick, and in 1778–'83 appeared his *Geographische Geschichte des Menschen*, &c. (2 vols.). Subsequently he visited England, Italy, France, Russia, and Sweden, and in England published his "Political Survey of the Present State of Europe" (1788). At Paris, where he arrived at the outbreak of the French revolution, he projected his "Geographical Annals," of which 3 volumes appeared. He also wrote with vigor against the political ideas evolved by the revolution, and during the long period of French ascendency was distinguished by his bold denunciations of the usurpations and oppressions of the French government. His chief works on these subjects are "France and the Free States of North America" (1795), and "General View of France from Francis I. to Louis XVI." His most important work is his "Geographical Pocket-Book," which appeared in 12 annual numbers (1802–'13). An abridgment of it, entitled "The Earth and its Inhabitants" (5 vols.), appeared in 1810–'13.

ZIMMERMANN, ERNST, a German theologian, born in Darmstadt, Sept. 18, 1786, died June 24, 1832. He studied philology and theology in Giessen, and, after discharging for several years the duties of teacher and preacher in various places, was in 1816 appointed court preacher at Darmstadt. In the intervals of his official labors, which included the education of the ducal children, he devoted himself to a variety of literary undertakings, and in 1822–'4 founded the *Allgemeine Kirchenzeitung* and the *Allgemeine Schulzeitung*, which were succeeded by the *Theologisches Literaturblatt* and the *Pädagogisch-philologisches Literaturblatt*. As a pulpit orator he was one of the most distinguished in Germany, and his efforts in behalf of education and church reform were attended with important practical results in Darmstadt. His works comprise *Religionsvorträge* (8 vols., 1816–'20); *Homiletisches Handbuch für Prediger* (4 vols., 1812–'22); *Monatschrift für Predigerwissenschaften* (6 vols., 1821–'4); *Geist aus Luther's Schriften* (6 vols., 1820–'28); an edition of Eusebius, &c. His life has been written by his brother Karl.—KARL, a German divine, brother of the preceding, born in Darmstadt in 1803. He was educated in his native city, and, after being employed there for several years in teaching, was in 1829 appointed assistant preacher at the cathedral of Darmstadt. As a pulpit orator he soon became conspicuous, and in 1842 was appointed court preacher, in which capacity he took charge of the education of the grand duke's children. In 1841 he published an appeal to the German Protestants, which, after several general conventions of the representatives of that body, resulted in the establishment upon a firm basis of the *Gustav-Adolfs-Stiftung* (society of Gustavus Adolphus), with branches in every part of Germany, and a special organ, the *Bote des Gustav-Adolf-Vereins*, of which he was appointed editor. His publications comprise several collections of sermons, of which the series entitled *Das Leben Jesu* (6 vols., 1837–'9) and *Die Gleichnisse und Bilder der heiligen Schrift* (7 vols., 1840–'51) are the most important. He has also produced a historical sketch of the society of Gustavus Adolphus, a life of his brother Ernst, and numerous theological articles published in the periodicals, beside costly editions of Luther's writings and letters to his wife.

ZIMMERMANN, JOHANN GEORG VON, a Swiss physician and author, born in Brugg, in the canton of Bern, Dec. 8, 1728, died in Hanover, Oct. 7, 1795. He was educated at the university of Göttingen, where, under the direction of his countryman Haller, he pursued an exceedingly comprehensive course of study with such exclusiveness that his health became permanently affected. In 1751 he took the degree of M.D., producing on that occasion a physiological dissertation on "Irritability," which is still held in esteem; and in the succeeding year he commenced the practice of his profession in Bern. He soon, however, removed to his native place, and entered upon a practice which in a few years surpassed that of any contemporary Swiss physician. Such was his skill in detecting the nature of diseases and prescribing the remedies, that patients resorted to him from all parts of central Europe, and he found the time that he would gladly have devoted to study or research almost exclusively occupied by professional engagements. He became in consequence discontented with his position, which, notwithstanding his love for his profession, he found not altogether congenial, and the symptoms of melancholy which had appeared during his residence in Göttingen were gradually developed into hypochondria. He avoided society, and passed his leisure hours in reading or meditation, and during this period produced the first sketch of his well known work on "Solitude." His deportment in the sick room was invariably cheerful, and amid his deepest fits of despondency he strove to inspire confidence and hope in his patients. In 1758 appeared his first important work, a treatise on "National Pride" (*Vom Nationalstolze*), which attracted much attention from the clearness and temperance of its views, and was speedily translated into the chief European languages. It was followed in 1763 by his work on "Experience in Medicine" (*Von der Erfahrung in der Arzneikunst*), which likewise obtained a European reputation, and was instrumental in procuring for him the offices of aulic councillor and physician to the elector of Hanover, to which place he removed in 1768. His time was now more occupied than ever with patients, and in consequence of his exertions he was obliged in 1771 to repair to Berlin to be operated upon for an internal disorder which caused him intense pain. He there made the acquaintance of Frederic the Great, and after a few months was restored to health, and in consequence became tolerably cheerful. Excessive professional exertion caused a return of his disorder, and the death of his wife and daughter and the sickness of his only son plunged him into a fit of unusual despondency. By the advice of his friends he married again, and under the influence of his second wife succeeded in throwing off in a measure his habitual gloom, and even mingled with apparent pleasure in social circles. During this period appeared his completed work on "Solitude" (*Ueber die Einsamkeit*), published in 1784–'5 in 4 vols. It obtained an immense popularity throughout Europe, and is the most matured of all his productions, and that with which his name is now most commonly associated. In 1786 Zimmermann attended Frederic the Great during his last illness at Berlin, and shortly afterward published two works purporting to give the private opinions of the king and many new facts relating to his life. They involved him in several sharp controversies with public men whose characters he had assailed, and were in general so full of coarse calumny and mendacity as to render it certain that he was entering a more dangerous phase of hypochondria, under the influence of which the political movements of the times seemed to him only conspiracies against religion and social order. The French revolution and the ideas propagated by it inspired him with a sort of frenzy; and for the purpose of arresting the republicanism which seemed likely to subvert all existing institutions, he addressed a memoir to the emperor Leopold, recommending a league of the aristocratical governments against the Jacobins, illuminati, and other revolutionists. In 1794 he was compelled by physical and mental exhaustion to give up all his occupations. His delusions multiplied after this, and during the last year of his life he was so tormented by fears of poverty, of starvation, or of being captured and tortured by the French for his anti-republican sentiments, that death was a relief to him. Beside the works mentioned above, he produced a life of Haller, a defence of Frederic the Great against Mirabeau, and some other miscellaneous publications.

ZINC, or Spelter, a white metal with a bluish gray tint like lead, and remarkable for its beautiful crystalline fracture when freshly broken. Its German name *Zink*, it is suggested, is from the nail-like fracture (*Zinke* or *Zacke*, a nail or spike) of the artificial oxide or furnace product called cadmia. The term spelter is derived from the East Indian name of the metal, and has been commonly used in commerce from the time the metal was thence introduced into Europe in the 17th century. The chemical symbol of zinc is Zn; its equivalent is 32.75; and its specific gravity 7 to 7.2. The metal slightly affects the taste, and when rubbed by the hand emits a peculiar odor. Nöggerath and Plattner obtained its crystals in the form of regular hexagonal prisms. Others have found them in pentagonal dodecahedrons, rhombohedrons, and octahedrons of the cubical system; but the observations yet made are too imperfect for establishing its true system of crystallization. Zinc is a comparatively soft metal. It is however harder than tin, and at ordinary temperatures is brittle, but between 212° and 300° F. it is both ductile and malleable. At about 450° it again becomes brittle, and may then be pulverized in a mortar. Its malleability at comparatively low temperatures is a property of recent discovery, and by means of it the metal is now rolled into sheets and drawn into wire. It is hardened by rolling, but is softened again by annealing at a low temperature. The metal has no great tenacity; a wire of it $\frac{1}{12}$ of an inch in diameter has been found to sustain a weight of 25 lbs. Its fusing point according to Daniell is 774°, and according to Guyton de Morveau 705°. At a bright red heat it may be volatilized, and its vapors igniting in the air burn with a brilliant white light. So combustible is the metal, that very fine turnings of it exposed to the air in a wire basket may be ignited with a match, and the combustion will continue till the whole is consumed. The product is an oxide of zinc, which is an impalpably fine, white, flocculent substance, forming the article recently introduced as a paint and known as zinc white. It is the *nihil album*, "flowers of zinc," and *lana philosophica* of the alchemists, and the *pompholyx* of the ancient Roman metallurgists. When zinc is volatilized in close vessels, the fumes conveyed into water are condensed and reconverted into the solid state. When exposed to a moist atmosphere, zinc is soon covered with a thin film of oxide, which adheres closely to it and protects the metal from further change. In the presence of air water is decomposed by zinc, hydrogen gas is evolved, and oxide of zinc is produced. The water is much more rapidly decomposed if sulphuric or hydrochloric acid be added. Boiling solutions of potash are also decomposed by zinc, with liberation of hydrogen and solution of the oxide of the metal. Pure zinc is much more slowly acted upon than the commercial article that is alloyed with iron, an effect owing, according to M. De la Rive, to the galvanic action produced by the presence of different metals. Zinc readily combines with a number of other metals, and several of its alloys, as brass, German silver, &c., are of great value in the arts. When melted in vessels of iron, it readily takes up a small portion of this metal, and the product, less fusible than zinc, crystallizes in large plates on cooling. The commercial article is liable to be contaminated by the presence of several other metals, as lead, cadmium, copper, tin, and arsenic, as well as of carbon and sulphur. The iron and lead are sometimes in appreciable quantities, and the amount of lead is occasionally found to exceed 1 per cent. The presence of arsenic seriously interferes with one very important use of the metal, viz., as a reagent in the process of detecting arsenic in toxicological investigations; and the presence of other impurities affects the value of the metal in another of its important applications, which is for generating electricity in the galvanic battery. A valuable paper upon the "Impurities of Commercial Zinc" was published in vol. viii., new series, of the "Memoirs of the American Academy of Arts and Sciences," furnished by Messrs. Charles W. Eliot and Frank H. Storer of Boston, May 29, 1860. They found that even the zinc specially prepared and labelled "pure" by those who sell chemicals is not to be relied upon; and it is only by testing samples procured from a dealer in metals, that zinc free from arsenic may be obtained. The Silesian zinc generally contains lead and cadmium, and minute quantities of sulphur and arsenic. The Belgian zinc is better, and some samples of it contain no arsenic. By careful selection of the Belgian ores, avoiding the blende and its associated minerals, that occur with the purer carbonates and silicates of zinc, a spelter might be made almost absolutely pure. Such in fact is now the case with the American zinc made by Mr. Joseph Wharton at the Lehigh zinc works, near Bethlehem, Penn. The ore employed in these works is a hydrated silicate of zinc (electric calamine), of great purity. The English zinc is for the most part very impure, containing much lead and arsenic, derived from the blende which is in common use at the English zinc works. The New Jersey red oxide of zinc contains distinct traces of arsenic, which is communicated to the metal made from it, and this is moreover contaminated with sulphur, carbon, &c.—The compounds of zinc of the greatest interest are the oxide, the carbonate, the chloride, sulphate, and acetate. The first of these, represented by the formula ZnO, consists of 80 parts by weight of zinc and 20 of oxygen. It is a white, tasteless, inodorous powder, introduced of late into the arts under the name of zinc white as a paint, the manufacture and properties of which will be further considered below. Its chief use had heretofore been as a medicine, its properties being tonic and anti-spasmodic. It has been given in epilepsy, whooping cough, chorea, and various spasmodic affections. Externally, it is applied in the form of an ointment, or by sprinkling it on the affected part as an exsiccant. The precipitated carbonate of zinc is used in medicine as an external application, being a mild astringent and exsiccant; it is usually applied in very fine powder, which is dusted on excoriated surfaces and superficial ulcerations. Chloride of zinc, called also butter of zinc ($ZnCl$), is a grayish white, semi-transparent, soft substance like wax, which melts at a temperature below redness. Exposed to the air, it rapidly attracts moisture and deliquesces. Its taste is burning, nauseous, and saline, even in very weak solutions. It is a valuable medicinal agent, employed internally as an alterative and anti-spasmodic, and externally as a caustic or escharotic, and is considered by many as more efficient in this respect than nitrate of silver. In over doses chloride of zinc acts as a corrosive poison; its best antidotes are the carbonated alkalies. Its concentrated solution, known as Burnett's disinfecting fluid, is noticed in the article Disinfectants; see also Preservation of Wood. The sulphate of zinc, or white vitriol, is the most useful of the zinc salts on account of the numerous purposes it serves both in the arts and in medicine. It is produced, like the sulphates of copper and of iron, from a natural sulphuret or blende by calcining, lixiviating, and crystallizing. Its solution is produced in large quantities in galvanic batteries excited by the action of dilute sulphuric acid upon metallic zinc. It crystallizes in colorless, transparent, right rhombic prisms, the composition of which is represented by the formula $ZnO, So_3, 7Ho$. They effloresce slightly in the air, and are very soluble in water. As a medicine the salt is tonic, astringent, and in large doses a prompt emetic. In over doses it acts as an irritant poison. As a tonic it is prescribed in very minute doses, frequently repeated, in dyspepsia, and is a valuable remedy in obstinate intermittents and various spasmodic diseases. Its solution is employed externally as a styptic to bleeding surfaces, and is used as a collyrium in diseases of the eye, as a gargle for ulcerated sore throat, and as an injection upon inner excoriated surfaces. When taken in over doses, if not immediately expelled by vomiting, its poisonous effects may be alleviated by swallowing large quantities of bland drinks and the administration of opium. In the arts it is sometimes used as a mordant and as a drying substance for paints, but is chiefly useful as the source whence are obtained the other compounds of zinc. The acetate of zinc is a medicinal preparation having properties and uses similar to the sulphate just described, and is employed by dyers as a mordant.—As noticed in the article BRASS, zinc was unknown as a metal to the ancient Greeks and Romans, although they employed its ores in combination with those of copper to produce the brass of which they made various utensils and coins. Possibly, however, as would seem from a passage in Strabo, it had been recognized and termed "false silver," a name given to a metal obtained by melting in a furnace a stone found near Andeira, which is first calcined and then mixed with a certain earth. The false silver which drops from the mixture, being melted with copper, produces the compound known as *orichalcum* or *aurichalcum*, which appears to have been the name of the brass of the ancient Romans. Of this brass are composed the coins struck in the commencement of the Christian era, and according to Göbel it is found in those only of Roman origin, the bronze objects of the Greeks consisting of copper and tin, with an occasional addition of lead; but Dr. John Percy, in his "Metallurgy" (London, 1861), cites a Greek imperial coin of Trajan, struck in Caria about A. D. 110, as containing 20.7 per cent. of zinc united with 77.59 of copper; and also two others in the British museum, which have unmistakably the color of true brass; one was a coin of Geta, struck at Mylasa in Caria between A. D. 189 and 212; and the other a large brass imperial Greek coin of Caracalla, struck A. D. 199. Pliny makes distinct mention of an ore called cadmia used in the smelting of copper, which would seem to be a combination of either the carbonates or the sulphurets of copper and zinc, most probably the former. He describes the white flocculent sublimate (*pompholyx*), which is no doubt the oxide of zinc, and also a dense incrustation, which he calls *spodos*, now known as cadmia and furnace calamine, which forms upon the inner walls of furnaces in which ores containing zinc are reduced. In other passages of the same writer the term cadmia appears to be applicable either to the furnace calamine or to the natural ore of zinc known as calamine. He speaks of its being absorbed by melted copper, which is thus made to assume the qualities of aurichalcum. Watson in his "Chemical Essays" quotes Festus, a writer who lived some time between A. D. 100 and 422, as thus indicating the character of both cadmia and aurichalcum: *Cadmia, terra quæ in æs conjicitur ut fiat orichalcum.* A similar account is also given by Ambrose, bishop of Milan, in the 4th century. Beckmann cites Aristotle and Strabo as alluding to an ore of the nature of calamine, which had long been in use for making brass; and also the references of Dioscorides and Galen to the collection of the artificial product, which in their time had come into use in medicine, especially in the treatment of ophthalmic diseases. The furnace calamine so closely resembles a natural product in its density and stony appearance, that it is not strange the name cadmia should have been used indiscriminately for this and the mineral calamine, when both were found to produce with copper the same metallic alloy. The term *tutia*, used in the 11th century by Avicenna, appears to have been employed by the Greeks and Arabians with the same indefiniteness, applied either to the artificial products or the natural compounds rich in oxide of zinc. Zosimus, who Beckmann supposes may have lived in the 5th century, gives a receipt for making brass by melting Cyprus copper and strewing over it pounded tutia. The alchemist Hermes also taught the use of tutia in the transmutation of metals for giving a gold color to copper. He describes it as an artificial product obtained from the furnaces in which copper ore is melted. The nature and value of the furnace calamine, which had accumulated in vast quantities at the furnaces at Rammelsberg, were not understood till the middle of the 16th century, when Erasmus Ebener showed that it might be used instead of native calamine for making brass.—The metal appears to have been first known to the Dominican monk Albertus Magnus, who lived in the 13th century. He obtained it at Goslar, and named it *marchasita aurea*, probably from its property of communicating a golden color to copper. Paracelsus, who died in 1541, was the first to describe the metal distinctly and give it the name of zinc. He knew of it only as being produced in Carinthia. George Agricola, who wrote about the year 1550, speaks of the Goslar zinc, which he calls *liquor candidus*, and in German *conterfey;* and George Fabricius, who died in 1571, conjectures that *stibium* is what the miners call *cincum*, which can be melted but not hammered. For a long time afterward little additional information was obtained of this metal. The alchemists appear to have been interested in keeping it unknown through an idea of its possible value in converting the baser metals to gold. As late as the year 1617 it appears from the account of Lœhneyss to have been an accidental product only of the furnaces at Goslar, and to have been in great request among the alchemists. According to his account, a metal called zinc or *conterfeht*, resembling tin, but harder and less malleable, collected in the crevices under the melting furnace where the stones were not well plastered. A collection of it made at any time might reach only a few ounces, or at most a couple of pounds. According to Beckmann, the first person who intentionally manufactured zinc from calamine was Henkel in the year 1741, which other authorities probably more correctly give as 1721. Beckmann himself states that in 1737 Henkel heard that zinc was then manufactured in England with great advantage. The process was introduced there by Dr. Isaac Lawson, a Scotchman, who, as stated by Pryce in his *Mineral. Cornub.*, "observing that the flowers of *lapis calaminaris* were the same as those of zinc, and that its effects on copper were also the same with that semimetal, never remitted his endeavors till he found the method of separating pure zinc from that ore." In 1742 the metal was distilled from calamine by A. von Swab, member of the Swedish council of mines; and Margraaf reinvented the same process in 1746. The first works established in England for this manufacture were at Bristol in 1743, by Mr. John Champion, to whom in 1758 a patent was granted for the use of the mineral blende in the manufacture of the metal. The process he introduced is the same that has ever since been in operation in England. Calamine brass had been made in Surrey about 100 years previous to this time. The production of zinc is of much older date in the East Indies. It was imported into Europe by the Dutch under the names of Indian tin, *speautre*, &c.; and a cargo of it, it is said, was taken by the Dutch from the Portuguese previous to the year 1640. It is vaguely referred to as coming from China, Bengal, Malacca, and the Malabar coast. In the latter part of the 18th century it had already become an article of some commercial importance, the Dutch East India company, according to Raynal, purchasing annually at Palembang 1,500,000 lbs. of it. The process of extracting it from its ores is reported to have been brought to Europe by an Englishman who went to India for the purpose of ascertaining the method in use there.* The first zinc produced in the United States was made about the year 1838, under the direction of Mr. Hassler, by Mr. John Hitz, for the brass designed for the standard weights and measures ordered by congress. The zinc was made at the U. S. arsenal at Washington from the red oxide of New Jersey, and the expense of the process was so great as to discourage for a long time afterward further attempts to reduce this ore. The more recent operations connected with the manufacture of zinc in the United States will be noticed below. In the early part of the present century the importations of Chinese zinc or *tutenague* into England had greatly fallen off, and in 1820 spelter was largely imported from Silesia to be sent abroad for the supply of the Asiatic markets.—Four varieties of ore are employed in the production of this metal. Two of these, the carbonate or calamine, and the hydrous silicate or electric calamine, have been described in the article CALAMINE, and a third under its own name of BLENDE. The fourth variety is the red oxide of zinc, to which allusion has been made in the article FRANKLINITE. This occurs in large veins near Sparta and Franklin in N. New Jersey, interspersed through the calcareous spar or forming the matrix in which the crystals of franklinite are thickly embedded. Its structure is granular and foliated, and its crystals are hexagonal prisms; hardness 4 to 4.5; specific gravity 5.43 to 5.52. Its color is deep red inclining to yellow, due to the presence of a small amount of oxide of manganese. This is the chief appreciable impurity, though, as already observed, arsenic, sulphur, and carbon are detected in the metal produced from it. Free from impurities, its composition is, zinc 80.26, oxygen 19.74 per cent. At Stirling Hill, near Franklin, the red oxide of zinc has been mined for the last 12 years by the New Jersey zinc company, the workings extending to more than 250 feet in depth. The ore is taken out in large blocks, always considerably mixed. One of these, weighing 16,400 lbs., was carried in 1851 to the great exhibition in London. On the adjoining property, belonging to the Passaic mining and manufacturing company, between 30,000 and 40,000 tons of ore have been taken from the vein since June, 1854. At the depth of 178 feet the bed yields about 21 feet in width of ore, of which about 2½ feet is rich red oxide and franklinite, and the remainder consists of the same more mixed with limestone. The inferior sorts are dressed at the mines before their shipment to the furnaces.—On the European continent, the ore most worked for zinc is the carbonate or calamine. Some of the most important mines are in Silesia, Carinthia, and near Liége in Belgium, particularly the Vieille Montagne mine between Belgium and Prussia. Large bodies of this ore have also been recently discovered and are now worked in Biscay, near Santander, in the Asturias, in the N. W. of Spain, and also in Sweden and in Ireland. The Belgian mines are famous for the vast amount of ore they have produced. The mine of Vieille Montagne or Altenberg in the village of Moresnet, between Aix la Chapelle and the town of Liége, has been worked since 1435. Some silicate and oxide of zinc are contained in the ore, and a poorer sort of it, which produces only about 33 per cent. of metal, is stained red from the oxide of iron it contains. The white varieties yield about 46 per cent. The principal mines of Silesia are in the magnesian limestones of the new red sandstone formation, not far from Beuthen, and are connected with the smelting works near Königshütte by railroads. The ores rarely produce 35 per cent. of metal, some portions of them not over 12 per cent. In England calamine, according to the statement of Dr. Percy, is met with in the devonian, carboniferous, and oolitic formations, in veins, beds, and large deposits or pockets, and was formerly obtained in large quantities in Somersetshire, Derbyshire, and Cumberland; but in 1859 the official records represent the total product of calamine in the United Kingdom as only 248 tons from Cumberland and 37 tons from Ireland. In the United States large deposits of calamine are found in several localities. The most important one of these is in the Saucon valley, Lehigh co., Penn., N. of Friedensville. Magnesian limestones of the lower silurian formation constitute the geological repository of the ore. The same group, about 50 m. to the N. E., furnishes the red oxide of zinc of N. New Jersey; and in Columbia co., Penn., the calamine found near Lancaster. The mines, opened in 1853, are worked by the Lehigh zinc company. The two varieties of calamine occur together, and a small portion of blende is interspersed among them. The silicate is also obtained comparatively free from other ores, so that it is worked by itself for the production of the pure zinc already referred to as made by Mr. Wharton at the Lehigh zinc works near Bethlehem. The workings, which extend to the depth of about 50 feet, penetrate the great irregular deposit in various directions, and are often interrupted by huge masses of limestone. About 100,000 tons of ore have already been taken from the mine of the Lehigh zinc company, and a much larger quantity is believed to remain, as the limits of the deposit have not yet been found either laterally or in depth, though borings have been made to the depth of about 120 feet. Another locality of the same ore is near Lancaster, Penn., but the calamine is too much mixed with blende and galena to be profitably worked. In Tennessee large deposits are found on Mossy creek on the East Tennessee and Virginia railroad, about 6 m. N. E. of Knoxville, and again on Powell's river, in Campbell co., about 40 m. N. of Knoxville. Here also the ore is in lower silurian limestones. Calamine, locally known as "dry bone," also occurs at most of the western lead mines, but is not esteemed of value. In Arkansas very pure varieties of calamine have been found in magnesian limestones in Lawrence, Marion, and Independence counties, chiefly in the first named. Blende is not worked in the United States, although it is a common ore at most of the lead mines. In Europe its use has largely increased of late years. In France, where no zinc was produced in 1840, there were recently 6 establishments making the metal from blende. At Swansea in Wales it has been worked for a number of years. In 1855 the sales of this ore in England were reported at 9,620 tons, while those reported of calamine of the Alston Moor mines were only 182 tons. In 1859 about 13,000 tons were raised in the United Kingdom, Wales supplying about 5,500 tons, Laxey in the Isle of Man 2,500, Cornwall 2,400, and Derbyshire 1,500. Devonshire and Ireland made up the remainder. Dr. Percy states that the price of blende has risen enormously of late in England. "A few years ago Laxey blende was usually sold at from 23*s.* to 26*s.* per ton; whereas recently one firm has paid as much as, if not more than, £4 4*s.* per ton for this ore." Dr. Ure in his dictionary speaks of it as selling at Holywell for £3 per ton.—The values of zinc ores on shipboard at Antwerp are as follows:

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* An elaborate historical account of zinc to the latter part of the last century is given in the work of G. F. C. Fuchs entitled *Geschichte des Zinks in Absicht seines Verhaltens gegen andere Körper*, &c. (Erfurt, 1788).

Metal worth 50 francs the 100 kilogrammes.		Metal worth 55 francs the 100 kilogrammes. Value of 1,000 kilogrammes, francs.	Metal worth 60 francs the 100 kilogrammes. Value of 1,000 kilogrammes, francs.
Percentage of zinc by analysis.	Value of 1,000 kilogrammes, francs.		
	CARBONATE OF ZINC.		
40	80.00	94.50	109.00
45	102.50	119.50	136.50
50	125.00	144.50	164.00
55	147.50	169.50	191.50
60	170.00	194.50	219.00
65	192.50	219.50	246.50
70	215.00	244.50	274.00
	SILICATE OF ZINC.		
40	45.00	57.00	69.00
45	67.50	82.00	96.50
50	90.00	107.00	124.00
55	112.50	132.00	151.50
60	135.00	157.00	179.00
65	157.50	182.00	206.50
70	180.00	207.00	234.00

—METALLURGICAL TREATMENT. Beside the employment of zinc ores for the production of the metal, they are also used in the United States in the preparation of the oxide or "zinc white," used as a paint. Two distinct operations are therefore to be described under this head. The reduction process varies in different countries, and somewhat also with the nature of the ores, the blendes and their mixtures requiring the most thorough calcination to prepare them for the subliming or distilling, to which all the ores are subjected in order to eliminate the metal. The three principal methods of reduction are the Belgian, Silesian, and English. The American practice will be noticed after the account of these. Some of the most important zinc smelting works of Belgium are at Moresnet, Angleur, and St. Léonard. At these the coarser calamine, in pieces not exceeding 6 inches in diameter, is first introduced into the calcining furnaces, resembling lime kilns, with alternating layers of non-caking coal of inferior quality. These furnaces are about 17½ feet high and 9 feet 8 inches in diameter at the widest part. Near the bottom the sides are drawn in like the boshes of a blast furnace to 5½ feet in diameter, and 4 openings are made in the bottom, through which the calcined ore is discharged. They are sometimes provided with a blast which is driven in through tuyères at the bottom. About 25 tons of calcined ore are taken out in 24 hours by 4 to 6 discharges, and the consumption of coal is from 3 to 4 per cent. For calcining the small ore large reverberatory furnaces are employed, furnished with two beds, one above the other. These, partially elliptical in shape, are about 16½ feet long and 7 feet wide. After being dried on the top of the furnace, the calamine is let down upon the upper bed, where it receives the first heat, and is well stirred for 6 hours. It is then dropped down to the lower bed, upon which the process is repeated at a higher temperature, and continued for the same time. About 8 tons are calcined in 24 hours. Smaller calcining furnaces are also employed, built on the top of the reduction furnaces, and heated by the waste gases. The effect of the calcination is to drive off the carbonic acid and sulphur, and leave the ore more or less completely converted into the oxide of zinc. The loss of weight by this operation is from 20 to 25 per cent., and includes a small proportion of zinc, which is consumed. The calcined ore, which should now contain about 50 per cent. of zinc, is next reduced to fine powder by grinding it under large crushing rolls of cast iron, which weigh about 3 tons 2 cwt. each, and work in pairs over a bed of cast iron. The same rolls are sometimes used to grind the clay employed in constructing the retorts used for distilling the ores. Each pair grinds in 12 hours from 15 to 18 tons of either the calamine or clay. The retorts require to be made of the most refractory kinds of fire clay, and great care is taken in selecting the different sorts of this and preparing a suitable mixture of it with pieces of old broken pots. When thoroughly mixed and tempered, the clay is moulded by one of two methods. By hand it is shaped into retorts at the rate of 10 to 15 per man in 12 hours, and when dried they cost about 80 cts. each. By the other method the clay is rammed into a cylindrical mould of the size of the retort, when the interior is bored out by a machine; 130 retorts may thus be made to each machine in 12 hours, and their cost when dried and burned is only about 32 cts. each. The dimensions of the retorts are usually about 3½ feet long, 8 inches in diameter outside, and 6 inches inside. Each one is provided with a nozzle, also moulded in clay, which fits its mouth, to which it is luted when the retort is set in the furnace. These nozzles project beyond the front wall of the furnace, and serve as condensers for collecting the metallic zinc. Upon their open outer ends, and continuing their line, are attached small vessels of sheet iron slightly conical in shape, with a hole of less than an inch in diameter in the apex or outer end, intended for the escape of the uncondensed vapors. In these cones portions of metal also collect, which escape condensation in the clay nozzles; and what is curious, these contain lead alloyed with the zinc, though lead alone is not volatile. The retort furnaces are built 4 together in one stack, their flues connecting in one central chimney. Each one occupies an arched space extending from the front to the back wall, which is about 3 feet. In a large furnace of the capacity of 78 retorts, this space is about 11 feet wide and 9½ feet high. Its front is divided by a series of cast iron shelves 6 to 8 in number, laid horizontally from one side to the other, their front edges ranging vertically with that of the front wall of the furnace. The compartments thus made are subdivided by fire brick slabs set on edge, directed toward the back wall; their distance apart is about 17 inches, or just enough to admit two retorts placed side by side. The shelves are made to pitch slightly forward, and on the continuation of their slope are constructed in the brickwork of the back wall a series of ledges designed as supports for the back ends of the retorts. These, when pushed in from the front, are thus supported at each end quite independently of each other, and their middle portions are exposed to the flames that are to circulate among them from the fire below. This is arranged upon grate bars set in the narrow fire chamber between the front and back wall of the furnace, to which access is had from an arched opening at the end of the stack. In front of each furnace under the floor a pit is constructed for receiving the residues from the retorts when these are cleaned out after each charge. The retorts are set inclining forward to facilitate their discharge, and to cause in the progress of the operation the slag, which might injure them if left in their hottest portions, to move more freely forward into their cooler outer ends. In order that they may not be overheated, the retorts of the lowest row are usually made thicker than the rest, and are allowed to remain empty and unused. On account of the greater heat in the lower portion of the oven, the charge to the retort is made to diminish in the ascending rows from about 27½ lbs. to 15 or 13 lbs. in the uppermost retorts; and care is taken to introduce into the upper rows only those ores which contain much oxide of iron, which might act upon the retorts at a high temperature. The rich products of previous distillations, which easily yield up their metal, are also put in these retorts. The calcined ore, after being well pulverized, is moistened with water and thoroughly mixed with fine bituminous coal, such as will not cake, to which half its weight of cinders or coke dust may be advantageously added. Once every morning, and again at night, the nozzle is removed from each retort, its interior is scraped out, and the charge is inserted by means of a long spoon or charger like that employed for filling gas retorts. The nozzle is then replaced in the mouth of the retort and well luted, and the sheet iron receiver is fitted to it. The vapors of zinc soon appear, and in 6 hours most of the nozzles are filled with melted zinc, which is then drawn out by a scraper, and poured into ingot moulds which contain from 20 to 60 lbs. each. The fragments of cooled zinc collected from the retorts and nozzles are remelted in cast iron pots, and the purer metal is cast into ingot moulds. The skimmings from these contain oxide of zinc, oxide of lead, protoxide of iron, and sand, and are either worked over again or employed in the manufacture of paint. In summing up the workings of the Moresnet furnaces in the first 4 months of 1857, the following are given as the average results of one of them in a period of 24 hours, the weights in kilogrammes being reduced to pounds, at the rate of 2.2 lbs. to the kilogramme: charge, 2,277 lbs. of calamine and 1,208 of carbonaceous reducing matter; products, 816 lbs. of zinc and 81 of zinc fume; total yield of zinc per cent., 39; fuel and materials consumed, 3,254 lbs. of coal, 3.8 retorts, 11.5 nozzles, and 0.66 lb. fire bars. The consumption of coal, including that used in the retorts and in the furnace, thus amounts to nearly 5½ tons to the ton of zinc, to which should be added that employed in calcining the ore and the small amount used in the preparatory heating of the retorts. If the ore contained 50 per cent. of zinc, there appears to be a loss of 11 per cent. This however is materially reduced by the residue collected from the retorts. Each furnace requires one head smelter and an assistant who attend for 12 or 24 hours, and are immediately succeeded by two others; and thus the work goes on continuously. The smelting is not considered profitable where the price of coal exceeds $3 per ton and that of fire clay $7, and this with ores containing not less than 45 per cent. of zinc. Where the Belgian process is conducted upon a large scale in England, it is found to produce the metal at a cost of about £18 per ton, including in this the cost of the ore. The Silesian process, which is next to be described, and which is also in use in England, is there found to be more economical to the extent of about £1 per ton in the cost of the metal, the saving being principally in the less amount of fire clay consumed in the latter process. The Belgian furnaces, it is thought, also require more labor and skill in operating them than the Silesian. The works of the Vieille Montagne company have been recently described in the treatise of W. Thum, entitled *Ueber den Zinkhüttenbetrieb der Altenberger Gesellschaft.*—The zinc works of Silesia are in the upper part of the province on the borders of Poland, and not far from Cracow. Of the 47 establishments in operation in 1857, one at Königshütte, known as Lydogniahütte, belonged to the Prussian government; the rest were owned by private companies and individuals. The Silesian company owned a number of the works, coal mines near to them, and also zinc mines. The government has mines of its own, and is entitled to $\frac{1}{20}$ of the product of all the others. The processes are the same in all the establishments, and have hardly varied for more than 20 years. The total production of spelter in 1857 was 31,480 tons, valued at 17,660,000 francs. That of the government works included in the above was about 895 tons. The ores are mostly calamine more or less mixed with blende, silicate of zinc, galena, cadmium, and oxide of iron, the last named sometimes amounting to 20 per cent. Their percentage of zinc varies from 12 to 35, and probably does not average over 18. Most of the mines are near Beuthen, and the ores lie in very irregular deposits in the magnesian limestones of the new red sandstone formation. They have been gradually becoming poorer, till their yield of zinc is now only about $\frac{2}{5}$ of what it was formerly. This involves an increase in the consumption of coal employed for their reduction, which in 1857 amounted to 20 tons to the ton of zinc. The ore is calcined in large reverberatory furnaces, which are sometimes heated by separate flues, and sometimes by the escape heat from the reducing furnaces. The furnace stacks are arranged, several together, in a large building surrounded by close walls, and with a roof open along the top for the escape of the smoke. Each stack is double, containing a series of arched recesses constructed horizontally on its opposite sides, and extending under the central arch, which is built over the top of the furnace. Under the middle of this is the fireplace, to which access is had from one of the ends. The same stack sometimes contains a furnace for calcining the ores, also an oven for baking the retorts, and finally a furnace for remelting and purifying the crude zinc. There are usually 5 or 6 recesses or receptacles on each side, each of them holding two retorts, thus making 20 to 24 retorts to each furnace. These are set upon a floor nearly or quite level, and the fire plays freely around their inner ends, which project beyond the recesses into the central fire chamber. The retorts, like those of the Belgian furnaces, are constructed of the most refractory fire clay, mixed with pulverized fragments of old retorts, but are of much larger size, being 4 feet long, 22 inches high, and 8½ inches wide. The front end is closed by a slab of fire clay, which comes a little above the middle, and which is taken out and replaced with the introduction of each new charge. The arched space above this is closed by the nozzle, which is exactly fitted to the opening, its lower edge resting upon a little bar of fire clay set across the mouth of the retort and resting upon brackets constructed at the sides for its support. The nozzles are very carefully shaped in plaster of Paris moulds consisting of two similar parts, the mixture of clay of which they are formed being carefully kneaded in each half of the mould separately. The sections are then put together, and the workman, introducing his hand, manipulates the clay along the line of junction until the two edges are incorporated together. The nozzles are elbow-shaped, and beside the opening at each end, another is left on the convex side of the elbow, which during the operation is closed with a flat piece of clay luted on. This is removed whenever necessary, to examine and clean out the interior. The wider end of the nozzle is fitted into the upper side of the mouth of the retort, and to the smaller and lower end is attached a short pipe of cast iron, by which the channel of discharge is extended vertically downward, and beneath this it is still further extended by a sheet iron pipe. This portion of the apparatus is supported by a flange on the cast iron pipe, which catches upon the back edge of a horizontal plate of iron forming along the front of the furnace the extension of the hearth upon which the retorts are set. The vertical pipe terminates with its open end a little above the floor of a receptacle constructed in the front of the furnace under the iron plate. Trays of iron are placed in these recesses to collect the zinc as it drops. The space about the mouths of each pair of retorts is carefully closed with pieces of fire brick set in fire clay and well plastered over with the same; and the outer space, occupied by the projecting nozzle, is closed by a sheet iron door. These precautions are taken to prevent the apparatus from chilling, which might not only obstruct the flow of the zinc, but also cause the retorts to crack, and thus let the fumes of the metal escape in the furnace. This still happens at times, and when discovered a workman immediately gets upon the top of the furnace, and, through holes made there for the purpose, introduces a long-handled mop, dipped in fire clay grout, with which he besmears and closes the crack in the retort. The charge of each retort consists of about 55 lbs. of roasted ore of the size of walnuts, mixed with oxide of zinc of previous operations, the skimmings of the crucibles used in remelting, and the incrustations collected from the retorts, nozzles, and pipes. To these are added about one half their bulk of cinders that have fallen through the grate bars. Before charging the retorts, which is done every morning, the fire is allowed to partially cool down, the clay door under the nozzle is knocked away, and the contents of the retort are drawn out with a rabble upon the iron shelf. The nozzle itself is also cleaned out in a similar manner. The retorts are then filled by means of a scoop, the clay doors are again luted in their places, and as soon as all the retorts have been thus treated the fire is gradually increased, till in 10 hours it reaches almost a white heat. It is important to keep this up as nearly uniform as possible. If it becomes so high that the metal will not condense in the nozzles, these must be cooled by opening the iron doors in front. If it falls too low, the metal becomes solid in the nozzle, and must be melted by the introduction of a heated rod of iron termed the nozzle cleaner. The first products of the distillation are aqueous vapor and carbonic oxide, bringing over with them a little oxide and metallic zinc. The proportion of the last gradually increases till the metal falls in small drops. The carbonic oxide burns at the open end of the discharge pipe with a bluish flame at first; this gradually increases in intensity and changes to greenish white, till it finally disappears as the zinc begins to drop. The process requires careful attention in regulating the fires and watching the condition of the retort; but, while it is going on, one man is competent to attend to a furnace and all its retorts. The zinc as it drops collects in pieces of all shapes, which are afterward gathered up, remelted in large clay crucibles, and run into ingot moulds. It is sometimes colored yellow by oxide of cadmium. The apparatus is slightly varied at some of the works. Flues are sometimes constructed under the retorts; and instead of the crooked nozzle, straight horizontal condensers of clay have been employed, the floor of which bulging down in the middle forms a receptacle for the zinc, from which it is ladled out from time to time and turned into the moulds. Very careful accounts are kept of the expenses of the Silesian works. In the government establishment they were rated for the year 1856 at 48.60 francs to the metrical quintal (220.47 lbs.) of metal produced, and in 1857 at 54.84 francs. They consisted in the latter year of the following items: ore, 26.84; fuel, 14.30; labor, 7.00; materials, 3.70; general expenses, 3.00. Coal is charged in this account at the selling rate of 7.3 francs per 1,000 kilogrammes, while in the estimates of the Silesian company it is charged at the actual cost of 5.61 francs. With this and other similar corrections, the cost of the metal is found to be 37.31 francs, which is only 2 francs more than that of the Silesian company for the first half of the year 1858, as appears from the following table of items:

ESTIMATE OF COST OF QUINTAL OF ZINC.

		Francs.
Labor		6.15
Fuel		12.10
Calamine	at the mine, 10.43 transportation, 2.18	12.61
Bricks, clay, &c.		1.83
Iron materials		0.32
Repairs		1.04
General expenses		1.31
Total		35.86

The total production of the furnaces of the company for the year 1857 was 74,707 metrical quintals, and for the first half of 1858, 41,175. The daily yield per furnace was 1.15 metrical quintals in 1857 and 1.11 in 1858; and the average yield of the ore in these years was respectively 14.93 and 14.01 per cent. The Silesian manufacture is fully described in the *Mémoire sur la métallurgie du zinc dans la Haute-Silésie*, by M. Julien (*Annales des mines*, 1859). The Silesian process of extracting zinc is in operation at the works of Messrs. Dillwyn and co. at Llansamlet, near Swansea, in Wales, where an argentiferous blende is reduced by it, but chiefly for the sake of the silver it contains. To separate the silver, it is found necessary to reduce the ore to very fine powder, sifting it through a screen containing 225 holes to the square inch. The calcination is then conducted with extreme care, and continued for 22 hours. The silver is next separated by a special process, and the residue is treated after the manner already described for the separation of the zinc.—The common method in use in England differs from the Silesian principally in the zinc fumes being conducted from the bottom of an upright pot straight down through the condensing tubes. This method is distinguished as the distillation *per descensum;* while the Silesian process, in which the fumes pass up to the top of the retort and thence into the condensing tubes, is known as the distillation *per ascensum.* Blende is almost the only ore employed. The coarser portions are crushed between iron rolls and passed through sieves of 5 or 6 holes to the inch. The earthy matter is then separated by washing; and the ore is next introduced into the calcining furnaces in charges of 16 cwt. The roasting of this occupies 24 hours, and about 2 tons of coal are consumed in the process. The usual loss of weight is about 20 per cent. The reduction pots, like the Silesian and Belgian retorts, are very carefully made of well selected materials. These are, for 3 pots, 7 cwt. of the best Stourbridge clay, 5 cwt. of "seconds," 3 cwt. of glass-house potsherds, and 6 cwt. of old spelter pots. The pieces of old pots, cleaned from adhering substances and reduced to coarse powder, are mixed and well kneaded with the clay and water to a proper consistency. A sort of barrel open at the ends, put together in 3 sections which are secured by iron hoops, serves as a mould in which the pot is gradually built up by hand, portions of the mixture being introduced from day to day and firmly compressed by beating with a wooden rammer. The upper edge is accurately bevelled off, and upon it are laid the broad ends of a series of flat wooden strips, the narrow ends of which are supported on a disk of wood secured at proper height on an upright stick set in the centre of the pot. A roof highest in the centre is thus made over the pot, and upon it the clay is moulded which is to form the top. When the clay is hardened the disk is loosened and taken out of the hole left in the middle, together with the strips of wood. The pots are gradually dried in a warm place, and before being used a hole 7 inches in diameter is drilled through the bottom, and the outside is coated with river mud containing salt, which, when the pot is heated, produces a glazed surface. The pots require to be handled with great care, and when introduced into the furnace in place of old ones are first gradually heated to redness in a kiln constructed for the purpose, and while red-hot are taken up and carried by a large pair of tongs shaped like callipers supported upon a pair of wheels. The furnaces stand upon the upper floor of the reduction house, and each pot is set over a hole 13 inches square, which communicates with the story below, called the cave. There are usually 3 pots on each of the two opposite halves of the furnace, and each of them is reached through an arched opening which occupies one of the sides of the octagonal-shaped stack. The condensing tubes are of sheet iron $\frac{1}{16}$ of an inch thick, roughly made by riveting together the overlapping edges. The upper one is short, of conical shape, largest where it fits the bottom of the pot. It is supported in an iron frame through which it passes below, and before being set is coated with clay inside and out by dipping it in a mixture of clay and water. The lower end fits into the other tube, the diameter of which increases downward. The lower end of this terminates over a vessel of sheet iron, which is placed on the lower floor to receive the zinc as it drops. One ton of calcined blende makes a charge for the 6 pots, and should yield from 6 to 8 cwt. of spelter. When charged, a few pieces of wood are first placed over the hole in the bottom of each pot, then a box of rough coke and one of small coke, after which 4 boxes of calcined blende and 4 of coke are put in alternately. The covers are then fixed and luted. The lower long tubes are not set until the vapor which burns at the bottom of the short tubes is observed to change to a light blue flame from its original brown color. A tight joint is secured by first dipping their smaller ends into a mixture of clay and water. It is sometimes necessary to remove the long tube and draw out or melt down with hot iron the zinc which occasionally condenses in the short one above. A charge is worked off in 6 to 7 hours, and, at the yield of 8 cwt. of spelter, the product is about one ton of zinc to a furnace in a week. The consumption of coal for this amount is from 22 to 27 tons. When the process is completed, the pots are cleaned of all adherent substances by means of iron tools introduced through the holes in the top and bottom. The rough zinc collected is melted in cast iron pots, well stirred and skimmed, and cast into flat open ingot moulds. The skimmings, called sweeps, are returned to the furnace with the ore. The cost of production is about £22 per ton of spelter, the items being about 3 tons of blende, ranging from £2 15*s.* to £3 5*s.* per ton; coal, £7; wages, £5 5*s.*; and materials (clay, bricks, &c.), £1.—The regular manufacture of zinc was first undertaken in the United States at the works of the New Jersey zinc company in 1850. The Belgian plan was adopted, but after the expenditure of large sums of money it was found impossible to succeed with the experiments, on account of the chemical action of the constituents of the ore at the high temperature employed upon the materials of the retorts. The oxide of iron in the franklinite, associated with the red oxide ores, was particularly injurious by its forming a fusible silicate with the silex of the clay. The next important trial was made in 1856 by a Mr. Hoofstettern, who built a Silesian furnace of 20 muffles for the Lehigh zinc company, at their mine near Friedensville. This proved a total failure, and seemed almost to establish the impracticability of producing spelter with the American ores, clays, and anthracite. About this time Mr. Joseph Wharton, the general manager of the Lehigh zinc company, and Mr. Samuel Wetherill of Bethlehem, both conceived the same plan of treating zinc ores in an open furnace, and leading the volatile products through incandescent coal, in order to reduce the oxide so formed, and draw only metallic and carbonaceous vapors into the condensing apparatus. Mr. Wharton constructed his furnace in Philadelphia, and Mr. Wetherill his in Bethlehem. The former, having completed his trials, filed a caveat for the process, but soon after abandoned it as economically impracticable. The latter continued his operations, patented the method, and produced some zinc, 8 or 10 tons of which were sold to the U. S. assay office in New York. The manufacture was not however long continued. In 1858 Mr. Wetherill recommenced the production of zinc, adopting a plan of upright retorts, somewhat like that in use in Carinthia, Austria, and that of the English patent of James Graham. Mr. Wetherill had succeeded in getting good mixtures of fire clays, and his retorts made of these, and holding each a charge of 400 lbs. of ore, proved sufficiently refractory for the operation. Works were erected under his charge at Bethlehem in 1858–'9, belonging to a company of which he was a member, the capacity of which was expected to be about 2 tons of spelter a day. They are not now however in operation. Mr. Wharton, after abandoning the method of reduction by incandescent coals, continued his experiments on different plans, and finally decided on the Belgian furnace as the best, after having actually made spelter from silicate of zinc, with anthracite in muffles of American clays, at a cost below its market value. These trials were made in the zinc oxide works of the Lehigh zinc company. Their success encouraged him to construct a factory at Bethlehem for reducing zinc ores, which he accordingly did in 1860, under a contract with the Lehigh zinc company. The daily product of the works soon exceeded 3 tons, and for the 2 years preceding the middle of Oct. 1862, the furnaces have been run steadily, producing at the rate of about 4,000,000 lbs. per annum. Four stacks or blocks are constructed, each containing 4 furnaces. To each furnace there are 56 retorts, making in all 896, working 2 charges in 24 hours. Mr. Wharton has fully established the fact, which European metallurgists still assert to be impracticable, that silicate of zinc can be made to yield the metal freely and profitably; and this has been done with the use of anthracite and of American clays, both of which were stoutly affirmed to be entirely unsuited to this manufacture. The ores he employs are principally silicate of zinc with a slight admixture of the carbonate.—Attempts have been made within a few years past to produce spelter from the blende of the western lead mines. The most promising of these are the works of Messrs. Matthiessen and Hegeler, two German chemists and metallurgists, at Lasalle, Ill. They were able to make about 200,000 lbs. of zinc per annum if supplied continuously with ore, but the difficulties of procuring this from the scattered lead mines, and of obtaining cheap coal and skilled and patient labor, are almost insurmountable at the West, and it is doubtful if the works are now in operation. A small spelter furnace erected at Mineral Point, Wis., about 3 years ago, it is believed, has been abandoned. —The annual production of zinc throughout the world, according to a late report of the Vieille Montagne company, is estimated at 67,000 tons, of which about 44,000 tons are converted into sheet zinc, and applied as follows: for roofing and architectural purposes, 23,000 tons; sheathing of ships, 3,500; lining packing cases, 2,500; domestic utensils, 12,000; stamped ornaments, 1,500; miscellaneous uses, 1,500. The estimate is probably too small for Europe alone. The product of England has rapidly increased within a few years from 1,000 tons of spelter per annum to 6,900 tons in 1858. The Belgian product is given at 29,000 tons, and the Silesian at 31,480. Poland, on the border of Silesia, produces about 4,000 tons; Austria, 1,500 tons; Sweden, 40 tons; and the Hartz, 10 tons. Spain also produces some zinc. The annual product of Europe alone at the present time probably amounts therefore to 75,000 tons. The consumption of the metal for roofing and architectural purposes has increased very rapidly during the last 15 years, and many of its uses are quite new within this period. In Germany and Paris it is the common roofing material; for which purpose sheets of pure metal carefully laid, with sufficient room to contract and expand, and fastened only with zinc nails, are very durable. Architectural ornaments on the façades of buildings are made of cast zinc instead of cut stone; also the ceiling ornaments of rooms are frequently made of zinc castings instead of stucco. Zinc is largely employed for coating iron (see GALVANIZED IRON), and for lining baths and water tanks, and to some extent for sheathing ships; it is made into milk pans and pails, pipes for conveying liquids, spikes, nails, wire, &c.; and it has been cast into statues and made to imitate bronze. Large quantities are consumed in making brass and yellow metal. It is used in chemical operations to decompose water with the aid of sulphuric acid, and thus produce hydrogen; but upon a large scale iron is found a cheaper though less efficient agent for this reaction.—*Zinc White.* The use of white oxide of zinc as a substitute for white lead was first suggested by Courtois, a manufacturer at Dijon, and was recommended on account of its freedom from the dangerous properties of the latter, by the celebrated Guyton de Morveau, near the close of the last century. M. Leclaire, a house painter of Paris, some years after this found that he could produce the oxide of zinc as cheaply as white lead; he also prepared a drying oil adapted to its use by boiling linseed oil with about 5 per cent. of oxide of manganese,* and furthermore substituted new yellow and green unchangeable colors in place of the poisonous ones in use, containing lead, copper, or arsenic. His method was to oxidize the metal by heating it in retorts and causing its vapor as it passes out to intermingle with the current of air, with which it is drawn through the condensing apparatus, the draught being caused either by a high chimney or an exhausting fan at the further extremity of the apparatus. The oxide of zinc takes the form of a light, flaky, white powder, which is collected very much after the method to be described below as employed in the American works. The Europeans still employ metallic zinc for this manufacture, and thus make, by selecting the purest sorts of spelter, the best varieties of zinc white. Such is the beautiful *blanc de neige*, or "snow white," made by the French and used by the painters in place of "silver white." The second grade is termed by the English manufacturers "zinc white," and two other inferior sorts are classed by them as "stone gray" and "gray oxide," the former of which is used as a ground color for the walls of houses, painting iron, &c., and the latter more particularly for painting ships and for the ground of more expensive colors on stone or cement. In the American process, the oxide is obtained directly from the ores, and is therefore more liable to be contaminated with impurities. This mode of producing it was devised in 1850 by Mr. Richard Jones of Philadelphia, and was successfully practised with the red oxides of New Jersey. It is only applicable with the use of a smokeless fuel, and cannot therefore be prosecuted where anthracite is not cheaply furnished. The products of combustion mixing with the metallic vapors and with the oxide of zinc would, in case of their producing a sooty deposit, effectually discolor the white product. The New Jersey zinc company, organized in New York and incorporated Feb. 15, 1849, was the first to undertake this manufacture; and according to the reports of their president, C. E. Detmold, they produced 2,425,506 lbs. of oxide in 1852, and 4,043,415 lbs. in 1853. For 10 years, up to the close of the year 1860, the total product of the works of this company at Newark, N. J., exceeded 19,500 tons, and they have since produced about 3,000 tons yearly. In 1853 the Pennsylvania and Lehigh zinc company was formed to work the silicates and carbonates of zinc then just discovered in the Saucon valley, Penn.; and furnaces were erected by Mr. Samuel Wetherill, who by a patented process of his own invention produced the oxide by contract at $50 per ton, the company furnishing him the ore at the works. About 4 tons are consumed to produce a ton of oxide. At the close of 1860 about 60,000 tons had been mined, and the manufacture has been since carried on at about the same rate of production as that given of the New Jersey zinc company in the same period. —In June, 1855, the Passaic mining and manufacturing company commenced this manufacture at their works built for the purpose at Communipaw, on the Morris canal, near Jersey City, making use both of the red oxide ores from Sussex county and the calamines from Saucon valley. The extent of their operations is only about one half that of each of the other establishments; but the processes employed are the same in them all, and the following description is therefore of general application. Beside the works already named, there is a small factory in operation at Trenton, N. J., using the Saucon valley ores, and making a few hundred tons of oxide annually. The furnaces of the Passaic company, 24 in number, are built in 3 stacks of 8 each, half of them opening on each side of the stack. Each furnace is like an arched oven, and measures about 6 feet from front to back, 4 feet in width, and about 3½ feet in height. The flue for conveying away the vapors and products of combustion passes upward through the centre of the roof. The floor of the furnace is formed of cast iron plates perforated full of small holes, the object of which is to admit the blast driven by two large fan blowers into the receptacle under the furnace, so that it shall penetrate every portion of the charge. The ores are first reduced to powder by passing them through two pairs of crushing rolls, and are then thoroughly mixed with about half their weight of the dust of anthracite. The charge consists of 900 lbs. of this mixture, and is introduced upon a fire first made of 250 lbs. of pea coal in full ignition. In 6 hours the zinc is driven out from the ore; the residue is then mostly drawn out, and another charge is immediately introduced. The amount of oxide of zinc obtained varies with the quality of the ore from 30 to 40 per cent. The zinc vapors pass up with the gaseous products of combustion through the pipe, the open end of which stands but a little above the roof of the furnace. Over it is an inverted funnel, which connects above with a sheet iron pipe, into which the vapors and gases together with a volume of air are drawn in by the action of two exhausting fan blowers working at the remote extremity of the apparatus. The air, rushing in under the open base of the funnel, causes at this point a vivid combustion of the zinc vapors, which burn with pale blue flames as they combine with the oxygen of the air. The process is far more suggestive in its appearance of destruction than of the formation and recovery of a valuable product. Over the 3 stacks there extends an immense receiver of sheet iron 6½ feet in diameter and 130 feet long, exposed to the cooling influence of the air from a row of windows near to it under the roof, and into this all the pipes from the furnaces discharge themselves. The great pipe connects with a square tower in masonry, in which a sheet of water is continually falling. From this the oxide of zinc is carried along through 3 other large pipes to a second tower containing 3 compartments, in one of which are the fans that create the draught. The current, still propelled by these, is carried on through other pipes into a series of flannel bags, some of which are over 4 feet in diameter, and extend the whole length of the rooms, which are 120 feet long, and fill it up to its entire width of 64 feet. They are suspended near together, and fill most of the space from the roof to the floor. Most of them are horizontal, and from some of these others go up vertically to the highest part of the roof. All the bags contain nearly 200,000 feet of flannel, and 3 persons are constantly employed with a sewing machine in making and repairing them. Their object is to filter the zinc oxide from the gaseous matters from the fires, which find their way through the flannel. Vertical pipes of cotton cloth, 10 or 12 inches in diameter, hang from the under side of the horizontal bags, and are called the teats. The oxide of zinc is shaken from time to time from the lower portions of the horizontal bags, and falling into the teats is discharged on untying the strings around their lower ends into strong canvas bags. It is a flocculent powder, extremely light and bulky, owing to the air dispersed through it. To expel this, the bags securely tied are laid upon a truck, and this is run by steam power forward and back under a roller, which presses upon them with great force. The oxide, thus rendered dense and heavy, is ground in ordinary paint mills with bleached linseed oil, and is then ready to be packed in small kegs, in which it is sent to market. Beside this purer article obtained from the flannel bags, an inferior oxide of zinc of dark color is collected in the iron receivers near the furnaces. This also is put up for a coarse paint, and other paints are made by merely pulverizing the zinc ores. These preparations are found to be admirably adapted for protecting metallic surfaces to which they are applied from rusting; and being moreover of little cost, they are largely used for painting iron surfaces, especially on board ships. The residuum of the furnace consists of slaggy matters with more or less unsublimed zinc ore and unconsumed coal; and in the use of the red oxide the iron of the franklinite associated with it all remains with this portion. Immense quantities of these matters collected about the works of the New Jersey zinc company were applied, in 1853, by Mr. Detmold for the manufacture of iron and steel. Mr. Edwin Post had in the previous year obtained the same products from the franklinite at Stanhope, N. J. (See FRANKLINITE.) The working of the slags has become a profitable branch of the business, producing about 2,000 tons of iron per annum. The cost of the manufacture of zinc white is made up of many items, some of which, as the bags, repairs, and general expenses, can only be correctly rated by careful computation extended through considerable time. No estimate of this kind has yet been made public.—The production has largely increased since the early operations of the companies. The demand is not only for home consumption, which in 1860 had amounted to 6,000 or 7,000 tons beside what was imported, but a considerable export business has since that time sprung up, indicating that in Europe as well as in the United States zinc white is rapidly gaining in favor as a substitute for white lead. This was the case in France and in the United States much sooner than in Great Britain. The French government early adopted the paint for the public buildings, and conferred upon Leclaire the cross of the legion of honor for his inventions. More than 6,000 buildings had been painted by the year 1849 with his preparations. They gave great satisfaction, being considered more solid and durable than the paints before used, and, unlike those which contained white lead, were not tarnished by sulphuretted hydrogen. The workmen employed by Leclaire were entirely free from the painter's colic, though when using white lead many of them had suffered from it every year. The best zinc white moreover far exceeded in purity and brilliancy the best white lead. The new colors mixed with the prepared oil dried rapidly without the use of the dryers required for white lead; and used in equal weight with lead, the zinc was found to cover better, and was hence cheaper at equal prices per pound. Used in the same bulk however with white lead, it did not go so far; and the English objecting to this, to its not drying so readily as lead with the linseed oil in common use, and to the transparency of the zinc white (which after all is the cause of its brilliancy by reason of reflecting instead of absorbing the light), the paint slowly came into favor in Great Britain. In March, 1860, the consumption of white lead, according to the letter of Messrs. Coates and co. published in "The Lancet," was nearly 100 times greater than that of white zinc. The importation of the latter, which was only 235 tons in 1856, had increased in 1860 to 1,000 tons. In the United States it is employed as a paint not only alone, but mixed with either barytes or white lead, or with both of them, and large quantities are thus sold under the name of white lead. The covering quality of white zinc is found to vary materially according to the manner of its preparation; by moistening the light flocculent oxide with water and drying it by artificial heat, it acquires a greater body than the same substance will when merely pressed unmixed with oil. This treatment causes any yellowish or greenish tints to disappear, and the article may be put up for the market in cakes of convenient size. Calcination before grinding with oil also improves the body of white zinc. Beside its use as a paint, oxide of zinc is applied to several other purposes; as for a mastic for rendering metallic joints tight; for glazing porcelain and pottery; for enamelling papers and cardboards in place of white lead and carbonate of barytes, formerly employed for this purpose; and it has been applied in the preparation of paste for artificial crystals, instead of oxide of lead or other metallic oxides. Its use by M. Maës of France for producing glass for optical purposes is noticed in the article GLASS, vol. viii. p. 292. Specimens of flint glass made with oxide of zinc were produced in the United States in 1860 under a patented process. The glass was more infusible than that made with oxide of lead, and was remarkable for its brilliancy and beautiful surface or "skin," as it is called. The most flocculent white zinc has been used for producing the down on artificial flowers.

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* Magnesia boiled with the oil is found equally effective with the oxide of manganese in causing the white oxide to harden readily; and some of the salts of zinc, as the chloride and sulphate mixed in very small proportion, answer the same purpose very well.

ZINGARELLI, NICOLO, an Italian composer, born in Rome, April 4, 1752, died in Naples, May 5, 1837. He studied in the conservatory of Loreto, composed the opera of *Montezuma* in 1781, followed by numerous other operas for Italian theatres, produced his *Antigone* unsuccessfully in Paris in 1789, became musical director of the chapel of the Vatican in 1806, was made by Napoleon in 1812 director of the conservatory in Rome and musical director of St. Peter's, and in 1813 Napoleon transferred him to Naples as director of the new conservatory there. He wrote a cantata on the death of Murat, which was seized by the Neapolitan police. He was in advance of contemporary composers in writing for the voice.

ZINGIS KHAN. See GENGHIS KHAN.

ZINNIA (from J. G. Zinn, a German botanist), a genus of highly ornamental American herbaceous and annual plants, with opposite, mostly sessile, entire leaves, solitary heads of florets terminating the branches, the ray florets large and broad, purple, orange, scarlet, or white. The zinnias belong to the natural order *compositæ*, and to the artificial division of *heliopsideæ*, in which the rays when present are fertile, and the seeds (achenia) furnished with a thick outer integument. The red-flowered zinnia (*Z. multiflora*, Linn.) has an erect, branching, somewhat hirsute stem, sessile or scarcely petioled, ovate lanceolate leaves, peduncles longer than the leaves, the apex hollow, inflated, striate, scales of the involucre appressed, ligules obovate obtuse, and achenia of the disk with a single awn. This species is found from North Carolina to Florida, but supposed to be naturalized. The great-flowered zinnia (*Z. grandiflora*, Nutt.) is a distinct and splendid species, with a stem 6 inches high, leaves an inch long, linear lanceolate, connate, with scabrous margins, scales of the involucre rounded, rays very large, orbicular-oval. It is found in the Rocky mountains. The garden zinnia (*Z. elegans*, Willd.) is a native of Mexico, and has opposite, cordate, ovate, sessile, amplexicaul leaves, hairy stem, and purple flowers; there are also many superb varieties, with rosy, scarlet, crimson, and white flowers, which are of great beauty in the flower border. The yellow zinnia (*Z. pauciflora*, Willd.), a native of Peru, has been longest known in cultivation; it has small, sessile, yellow flowers. The zinnias are easily raised from their seeds, which are sown early to insure a longer bloom. Until lately no double flowers were known among them, but by the patient skill of the French florists varieties have been produced in which tubular florets have assumed a ligulate or strap-shaped form to the very centre of the disk, resembling a double dahlia, but smaller, stiffer, and more persistent. Every possible color, in shades of rich purple, deep red, light red, striped, orange, and buff, may be noticed in different plants, the hues producing a most charming effect under the clear sunshine. Large plants in a rich soil, producing 30 or 40 of these blossoms at the same time, are striking objects in the flower garden.

ZINZENDORF, NIKOLAUS LUDWIG, count of Zinzendorf and Pottendorf, founder of the revived sect of Moravians or United Brethren, a descendant of a noble family of Austria, born in Dresden, Saxony, May 26, 1700, died at Herrnhut, May 9, 1760. His father, one of the elector's ministers of state, dying when the son was very young, the latter was educated by his grandmother, Madame von Gersdorf, who sympathized in her views and feelings with the German pietists. Though a mere child, his mind took an enthusiastic direction, and he used to write letters to the Saviour and throw them out of the window, hoping that the Saviour might find them. At the age of 10 he was sent to the academy at Halle, then under the direction of the celebrated Francke, where he established devotional meetings, and cultivated an intense spirituality. His uncle, not being satisfied with these tendencies, removed him in 1716 to the university of Wittenberg, where the pietists of Halle were in very ill repute. The feelings of Zinzendorf, however, remained unchanged; and in addition to his other duties, he applied himself, without any direction or aid, to the study of theology, fully resolved to become a minister of the gospel. In 1719 he left Wittenberg, and travelled through Holland and France, and subsequently described his tour in a work entitled "Pilgrimage of Atticus through the World." In 1721 he was appointed one of the council of regency at Dresden, but he was too much occupied with theological inquiries and devout exercises to give much attention to the duties of the office. In 1722 he married the countess Erdmuth Dorothea Reuss, and about the same time gave some emigrant Moravian Brethren permission to settle on his estate of Berthelsdorf, in Upper Lusatia; a settlement which in 1724 received the name of Herrnhut, which signifies "protection of the Lord." The count, in connection with some others, labored to instruct these settlers and their children. As they were not all agreed in their religious opinions, it was an important object with him to establish a union among them in the fundamental truths of the Protestant religion; and with a view to this, he formed statutes for their government. The same year he was appointed one of the wardens of the congregation; he resigned this office in 1730, but resumed it in 1733. In 1734 he went under an assumed name to Stralsund in Prussia, passed an examination as a theological candidate, and preached for the first time in the city church; and the same year he received holy orders at Tübingen. He then travelled into different countries to extend his society, but was not everywhere favorably received. In 1736, on his return from a tour in Switzerland, he was met by an edict forbidding him to return to his native country, whereupon he repaired to Berlin. There, under the sanction of the king of Prussia, he was consecrated bishop of the Moravian congregation, and from that time was always called the ordinary of the Brethren. The order of banishment, occasioned by what were considered his dangerous religious innovations, was repealed in 1747. In 1739 he published a kind of catechism entitled "The Good Word of the Lord," and the same year made a voyage to the islands of St. Thomas and St. Croix, where the Brethren had already established missions. In 1741 he laid aside his episcopal function in consequence of having determined to make a visit to North America, where he believed it would be prejudicial to his intended labors, and where he proposed to appear mainly as a Lutheran divine. He accordingly came to Pennsylvania in that year, bringing with him a daughter, Benigna, 16 years old. He commenced his labors by preaching at Germantown and Bethlehem, and in Feb. 1742, he ordained at Oly, Penn., the missionaries Rauch and Rüttner. At Shekomeco he established the first Indian Moravian congregation in America. After remaining in the country two years, during which he was very diligently and successfully employed, he returned to Europe in 1743, and made a journey to Livonia; but the Russian government would not allow him to proceed further. He then made several visits to Holland and England, where he spent more than 4 years, and, by the aid of Archbishop Potter and some others, obtained an act of parliament for the protection of his followers throughout the British dominions. Though the number of his opponents constantly increased, the number of his followers increased also, and new missions were established in the East Indies and other remote regions. He also established a Moravian academy, and obtained a committee of investigation into their principles, which commission declared the Moravian community true adherents to the Confession of Augsburg. He spent his latter years at Herrnhut, where he died after an illness of a few days. His remains were borne to the grave by 32 preachers and missionaries, whom he had reared, from Holland, England, Ireland, North America, and Greenland.—Count Zinzendorf wrote more than 100 books, some for the edification of his society, others to repel attacks on himself and his followers, and others giving the history of the origin and organization of the society, and of his own labors. They contain much that is unexceptionable and excellent, though there are portions of them that would by most readers be deemed extravagant.—His son, Count CHRISTIAN RENATUS, was educated at the university of Jena, and in 1744 was introduced by his father as an elder of the single brethren. He wrote many practical soliloquies and meditations, and died at Westminster, May 28, 1752.

ZION, MOUNT, one of the hills on which Jerusalem is built. It occupies the whole S. W. section of the ancient site of the city, rising abruptly from the valley of Hinnom on the W. and S. to a height of about 150 feet, and above the valley of Jehoshaphat on the E. about 300 feet. On the S. E. it slopes steeply in a series of cultivated terraces to the site of the "king's gardens," the whole declivity being sown with grain and dotted with olive trees. On the E., overlooking the Tyropœon, are precipices which were anciently much higher than they are now, the level of the ground at their base having been considerably raised. To the N. alone was the site anciently unprotected by nature, and here it was strongly fortified with towers by the Jebusites. The valley of the Tyropœon ran along this side also, separating Zion from Akrah on the N., as it did from Moriah and Ophel on the E. Mount Zion was the first spot in Jerusalem occupied by buildings, and is supposed to be the Salem of Melchisedek. It was captured from the Jebusites by King David, who made it the seat of his court and the depository of the ark. Hence it is frequently called the "city of David" and the "holy hill." Josephus calls it the "upper city," adding that it was known also in his day as the "upper market." A large part of it is outside the modern walls. Dr. Smith ("Student's Manual of Ancient Geography," 1861) says: "Whether this hill was identical with the Zion of the Old Testament must be considered doubtful; recent researches have made it probable that the ancient Zion was on Moriah."

ZIRCONIUM, a rare metal, separated by Berzelius in 1824, an oxide of which combined with silica forms a component of the minerals zircon and hyacinth. The double fluoride of potassium and zircon being heated with potassium, and the residue when cold treated with dilute hydrochloric acid, the metal zircon falls as a black powder. It is purified by washing with chloride of ammonium, and then with alcohol. Under the burnisher it takes a slight metallic lustre, and its conducting power for electricity is very low. Its symbol is Zr; its equivalent probably 33.6. Heated below redness in air or oxygen, zircon burns with intense light, the product being zirconia. This, the only oxide, from the usual relation of equivalents of oxygen in bases and acids which form salts, is probably the sesquioxide (Zr_2O_3). Zircon oxidizes also in boiling water, and in hydrofluoric acid, setting free hydrogen. It is thus found as a white powder, infusible and insoluble. Its hydrate gelatinizes, and dissolves readily in acids only. The salts of zirconia have an astringent taste; they are precipitated by the caustic alkalies, and not redissolved in excess of these. Infusion of galls gives a yellow precipitate with them, phosphate of soda a white one. The mineral zircon ranks among precious stones, its varieties in appearance being brown, red, yellow, gray, white, adamantine, and translucent.

ZISKA, or ZIZKA, JOHANN, the leader of the Hussites, born in the open field under an oak near the castle of Trocznow, in the circle of Budweis in Bohemia, about 1360, died in Przibislaw, Oct. 12, 1424. He was of a noble family of Bohemia, and when a boy lost an eye; but the common story that from this circumstance he derived the name of Ziska is untrue, as that word does not signify "one-eyed" either in Polish or Bohemian. He went at the age of 12 as a page to the court of Bohemia, and subsequently became chamberlain. From his youth he had been distinguished for his eccentric conduct and his love of solitude. He accompanied the body of volunteers which went from Bohemia and Hungary to join the knights of the Teutonic order in the war against the Lithuanians and the Poles, and was present at the battle of Taunenburg on July 15, 1410, where the knights suffered a terrible defeat. He was afterward in Hungary engaged in a war against the Turks, and entering the English army took part in the battle of Agincourt in 1415. After this he returned to the Bohemian court. He had early embraced the doctrines of the Hussites, and entered deeply into the feelings of resentment which the execution of Huss and Jerome of Prague excited throughout Bohemia. Being often seen by the king absorbed in thought, he was asked the cause of his gloom. "What Bohemian," he replied, "can be otherwise than deeply affected, when his country is insulted by the infamous execution of Huss and Jerome?" "What can we do," Wenceslas carelessly answered, "to repair this injury? If thou canst devise any means, go and avenge thy countrymen; thou hast our free permission." It needed only the encouragement of these words for Ziska to leave the court and enter upon his work. His hatred of the Roman Catholic clergy was intensified by a private wrong; for his favorite sister had been seduced by a monk. He soon gained the confidence of the people, and joined the party under Nicholas of Hussinecz, who took up arms ostensibly to protect the person of their king. The weak and perplexed Wenceslas demanded that they should give up their weapons; but on April 15, 1418, they entered the royal castle armed, at the persuasion of Ziska, and were received by the king, who was thus addressed by their leader: "Sire, behold a body of your majesty's faithful subjects. We have brought our arms, as you commanded. Show us your enemies, and you shall acknowledge that our weapons can be in no hands more useful to you than in those which hold them." "Take your arms," said Wenceslas, hesitatingly, "and use them properly." The king, however, was of too feeble a character to protect the followers of the new religion, and the disputes between the Roman Catholics and the Hussites waxed fiercer and fiercer. At last, on April 16, 1419, as a procession of priests of the latter was marching to St. Stephen's church, one of them was struck by a stone which came from the town house, where the magistrates, who were Roman Catholics, were assembled. Ziska immediately headed his adherents, stormed the town hall, and threw 13 of the city council into the courtyard below, where they were instantly massacred by the mob. This was the signal for the breaking out of the Hussite war. Wenceslas, on hearing of the proceedings, died in a tumult of passion, leaving Bohemia without a ruler and sundered by intestine war. For a time every thing was in commotion. Churches were pillaged by the enraged Hussites, convents burned, and altars overturned. The queen Sophia, the widow of Wenceslas, assumed the regency, and fortified the castle and town of Prague; while the Hussite leaders, Ziska and Nicholas of Hussinecz, began the siege. A suspension of arms was finally concluded, general liberty of conscience was granted, and Ziska retired with his followers and fortified himself in Pilsen. Sigismund, emperor of Germany and king of Hungary, brother of the deceased monarch, was the next heir to the Bohemian throne, and toward the close of 1419 held a meeting of the nobles of Bohemia and Moravia, and of the deputies of the cities, in which he ordered the deputies from Prague to destroy the barricades in the streets and the fortifications against the castle. He also removed all Hussites from office, and repairing to Breslau proclaimed a crusade against them. The spirit of the members of the new religion was now roused to fanaticism. Large numbers repaired to Pilsen, where Ziska not only imparted to them military discipline but the fire of his own enthusiasm, and his efforts were aided by the declaration of the preachers that Christ was about to appear on earth, and that all cities except Pilsen, Saatz, Laun, Schlan, and Klattau were to be destroyed by fire. A solemn league was formed at the first named place, in which the confederates bound themselves to reject Sigismund as king, and to oppose any sovereign who did not admit the claims of the laity to the participation of the cup in the holy sacrament. Ziska formed his head-quarters on the top of a steep mountain in the district of Bechin, which received the name of Mount Tabor. As vast numbers fled thither for safety, he erected walls for the defence of the place, and this fortress has been considered the first essay in the modern style of fortification. From the name of this mountain his followers were called Taborites, while the more moderate Hussites were known as Calixtines. The first exploit of Ziska was the conquest of Prague, with the exception of the castle; and in order to defend the city against Sigismund, who was approaching at the head of 30,000 men, he intrenched himself on the hill of Wittkow, and there on July 14, 1420, with a force of only 4,000 men, repeatedly drove back the enemy with great loss. The place is still called Ziska's hill. The emperor, who was sadly in need of money, was finally obliged to conclude a temporary armistice with the citizens of Prague, and purchased the barren honor of being crowned in the castle by granting general liberty of conscience. In 1421 Ziska took the castle of Prague, and with it gained possession of 4 cannon, the first that were introduced into Bohemia. Subsequent to this cannon and guns became common in both armies. During the same year he lost the sight of his remaining eye by an arrow, while besieging the castle of Roby. This however did not interfere with his activity or his generalship. He was carried in a car at the head of his troops, and was enabled to give orders for their disposition from the description of the ground given him by his officers, and from his own minute knowledge of the country. In 1422 Sigismund led a second vast army into Bohemia, which included in its numbers a splendid body of 15,000 Hungarian horse. A battle took place at Deutsch-Brod on Jan. 18, in which the imperial army was totally routed. Followed closely by Ziska in their retreat to Moravia, the fleeing troops, in crossing the Iglawa on the ice, broke through and 2,000 were drowned. At Aussig in Bohemia, Ziska encountered a Saxon army under the electors of Saxony and Brandenburg. The Saxons at first stood their ground and repelled the onset of the Hussites, and the latter, who had never before experienced such resistance, were so amazed as to be incapable of action. Hereupon Ziska said: "Well, my brethren, I thank you for all your past services; if you have now done your utmost, let us retire." The fanatical warriors, under the influence of this rebuke, again rushed forward, and defeated the Saxons with terrible slaughter. He repeatedly vanquished the citizens of Prague, who were not disposed to obey his orders, and the uniform success of his arms at last convinced Sigismund that there was no prospect of the reduction of Bohemia. The emperor therefore made proposals to the blind general, offering full religious liberty to the Hussites, and the post of governor of Bohemia to himself, with numerous privileges. Ziska, who saw with much anxiety the dissensions prevailing among the Hussites, was not averse to a settlement; but before negotiations were concluded he was taken sick while engaged in the siege of Przibislaw with a pestilential disease, and died. His followers, in their fury at the news of his death, stormed the town, burned all the dwellings, and killed all the inhabitants. Ziska was victor in more than 100 engagements, and won 15 pitched battles. Once only, at Kremsir in Moravia, he suffered a reverse, and even then all the evil consequences were warded off by the skilful manner in which he conducted his retreat. He was as great an engineer as he was a general. During the early part of the war, being deficient in cavalry, he invented a kind of bulwark made of baggage carts, for the protection of his infantry. The great stain upon his character was his cruelty. He considered himself the chosen instrument of the Lord to visit his wrath upon the nations, and a fanaticism which asked no mercy for its defenders gave none to its opposers. His line of march could be traced through a country laid waste with fire and sword, and over the ruins of plundered towns. One of the dogmas held by his followers was, "that when all the cities of the earth should be burned down and reduced to the number of five, then would come the new kingdom of the Lord; therefore it was now the time of vengeance, and God was a God of wrath." The cries and groans of the monks and priests whom he sent to the stake he was wont to call the bridal song of his sister. His victories were generally won by the decisive charge of a chosen band of his followers named the invincible brethren. Ziska was buried in the church of Czaslau, and over his tomb his iron battle axe, his favorite weapon, was suspended. In 1623 the tomb was overthrown by an imperial order, and the bones of Ziska removed. A common story that he ordered his body to be left to the dogs and kites, and that his skin should be used as a drum, and that it was so used by the Hussites in their subsequent wars, is a fable.

ZIZIM, or Djem, a Turkish prince, son of Mohammed II. and younger brother of Bajazet II., born in 1459, died at Terracina in 1495. He first saw his brother after their father's death in 1481, and claimed the throne on the ground that Bajazet had been born while Mohammed was yet a private man, and that he was the first born after his father had become sultan. He revolted, was defeated, fled to Egypt, and sought refuge in 1482 with Pierre d'Aubusson, grand master at Rhodes, who for a sum of money had agreed with Bajazet to keep him imprisoned. He was thence transferred as a prisoner to France, was surrendered in 1489 to Pope Innocent VIII., and in 1495 was returned by Alexander VI. to Charles VIII., soon after which he died, as has always been believed, of poison administered by Alexander.

ZNAYM, a city of Moravia, 38 m. N. W. from Vienna; pop. 6,500. It is the capital of the circle of the same name, and was formerly capital of Moravia. Marmont here defeated the rear guard of the archduke Charles, July 11, 1809, and the armistice which was followed by the peace of Vienna was concluded here July 12.

ZOAR, a post village of Lawrence township, Tuscarawas co., O., on the left bank of Tuscarawas river, and on the Ohio canal and the Cleveland and Pittsburg railroad, 111 m. E. N. E. from Columbus and 80 m. S. from Cleveland; pop. in 1860, about 300. It was settled in 1818 by a community of Germans called Separatists under the leadership of one Bimeler. They have a community of goods, and elect an agent and 3 trustees for the management of their affairs. The village contains a church, a small linen factory, a woollen factory, an oil mill, a flouring mill, and a custom grist mill.

ZODIAC, an imaginary belt in the heavens, extending 9° N. and 9° S. of the ecliptic, within which the motions of the sun, moon, and principal planets are confined. It was divided by the ancients into 12 parts of 30° each, called signs, and designated as follows: Aries, the Ram; Taurus, the Bull; Gemini, the Twins; Cancer, the Crab; Leo, the Lion; Virgo, the Virgin; Libra, the Scales; Scorpio, the Scorpion; Sagittarius, the Archer; Capricornus, the Goat; Aquarius, the Water-Bearer; and Pisces, the Fishes. These names were given from a fanciful resemblance to the objects designated, which was supposed to be presented by the configuration of the stars. This division is still employed.

ZODIACAL LIGHT, a triangular track of light, seen within the tropics, after sunset and before sunrise, stretching up from the horizon 50° or more according to the season, its axis nearly or quite corresponding with the ecliptic. It is of a warm, yellowish tint, its light stronger at the central parts, and diffused toward the boundaries. In higher latitudes it is visible under favorable circumstances during spring and autumn. It is most conspicuous when the ecliptic makes the greatest angle with the spectator's horizon, at which time in moderate latitudes it reaches to the zenith or beyond it, having near the horizon a striking brilliancy, and thence fading upward. Near the equator it often has at the horizon a brilliancy equal to the sky in the east as the sun is about to rise. —History has preserved but few ancient records of this phenomenon, and these are unsatisfactory. Pliny has been thought to allude to it under the name of *trabes*, though Humboldt dissents from this supposition. From Pliny to Kepler, who described it and supposed it to be the atmosphere of the sun, there is hardly any thing worthy of mention. Dominique Cassini, in 1683, began to notice it, and during 11 years accumulated a greater mass of observations than all others together up to those of Jones, in 1853-'5. Cassini, finding, as he supposed, that the northern edge of the light bent away more and more from the ecliptic during March and April, when the sun's equator was similarly increasing its inclination to the ecliptic, concluded the cause to be a solar emanation; and this opinion has biased and misled astronomers ever since. He assigned to this emanation a lenticular shape, having in June a diameter equal to that of the sun, and in March twice as great. Cassini gave to the phenomenon the name it now bears. It was noticed in 1731 by Mairan, who considered it to be a reflection from the sun's atmosphere stretched out into a flattened spheroid. But Laplace has demonstrated that this is impossible from the extent of the heavens covered by the light, taken in connection with the fact that the sun's atmosphere can extend no further than to the orbit of a planet whose periodical revolution is performed in the same time as the sun's rotary motion about its axis, or in 25½ days; that is to say, only as far as $\frac{9}{20}$ of Mercury's distance from the sun. The theory of this philosopher, which astronomers have generally adopted, is thus modestly offered in his *Système du monde*, in connection with his famous doctrine of the genesis of the solar system (see Nebular Hypothesis): "If in the zones abandoned by the atmosphere of the sun there are any molecules too volatile to be united to each other or to the planets, they ought, in continuing to circulate around this star, to offer all the appearances of the zodiacal light without opposing any sensible resistance to the different bodies of the planetary system, either on account of their extreme rarity, or because their motion is nearly the same as that of the planets with which they come in contact." This rotating ring Laplace supposed to be somewhere between the orbits of Venus and Mercury. All these theories are based on Cassini's erroneous conclusion that the axis of this light has a fixed relation to the sun's equator. The remarkable meteor shower of 1833 gave an impulse to speculations respecting the zodiacal light. It was suspected that this meteoric display was owing to the passage of the earth through the substance of the light. This theory found an advocate in Biot, who argued that the earth then passed near the node of this substance. This led J. C. Houzeau to suspect the justice of Cassini's conclusion, and in 1844 he announced in the *Astronomische Nachrichten* that "the supposition of the existence of this light in the plane of the sun's equator does not satisfy the observations made;" and that the cause of the appearance "may be more local than has been hitherto supposed." Prof. C. Piazzi Smyth gives, in the "Transactions of the Royal Society of Edinburgh," vol. xx., part iii., an account of valuable observations made at the Cape of Good Hope in 1845.—In April, 1853, the Rev. George Jones, chaplain of the U. S. Japan expedition, commenced in the Pacific ocean a series of observations, which were conducted almost daily during two years, with results of unrivalled importance; 341 successful observations were made, all of which were charted down with conscientious fidelity. They are especially valuable from being, in the observer's language, "independent of hypotheses, and independent of each other." These charts, together with accompanying explanations, were published, as a supplementary volume, in the report of that expedition. Humboldt and others had noticed intermittent variations in the lustre of the light, not in the nature of pulsations so much as of a rapid fading away, and a gradual brightening again. This appearance is confirmed by Mr. Jones, who speaks of a swelling out laterally and upward of the pyramid, with an increase of brightness in the light itself; then in a few minutes a shrinking back of the boundaries and a dimming of the light, almost at times as if quite dying away; and so back and forth for about three quarters of an hour. The light, though stronger at the central parts, does not shade off uniformly to the borders, but has two distinct degrees of lustre—a triangle within a triangle—two different kinds of light as it were, as if the matter was more condensed at its central parts and thinned out beyond. The inner is termed by Mr. Jones the stronger light, and the outer the diffuse light. These are not bounded by sharp lines, but melt away by degrees; still there is between the two a line of greater suddenness of transition, while the experienced eye has no difficulty in tracing the outer boundary of the diffuse light. The stronger he found to be approximately 60° in its greatest width, and the diffuse 90°. The data furnished by these observations led the observer to the following conclusions: First, he never at any one time saw the whole actual extent of the zodiacal light. In support of this deduction he considers: 1, when his position was N. of the ecliptic, the main body of the zodiacal light was on the N. side of that line; 2, when his position was S. of the ecliptic, the main body of the zodiacal light was on the S. side of that line; 3, when his position was on or near the ecliptic, the light was equally divided by the ecliptic, or nearly so; 4, when by the earth's rotation on its axis he was during the night carried rapidly to or from the ecliptic, the change of the apex and of the direction of the boundary lines was equally great, and corresponded to his change of place; 5, as the ecliptic changed its position as respects the horizon, the entire shape of the light became changed, which would result from new portions of the nebulous matter coming into position for giving him visible reflection, while portions lately visible were no longer giving him such a reflection. The first four of these results were not absolutely invariable; but the exceptions were few, and may have been occasioned by the nebulous ring not lying exactly in the plane of the ecliptic. The principle involved in this deduction may be familiarly illustrated by the rainbow; in case of which the atmosphere in the region of the shower is filled in every direction with the variously colored rays reflected by the rain drops, though all are lost to the eyes of the observer except those forming the arch which he sees, and this arch is new with every change of his position. If this deduction is correct, it is obvious, secondly, that the parallax of the light cannot be found. Thirdly, a plane passing through the centre of the light would correspond pretty nearly with the ecliptic. Fourthly, it cannot be a reflection from our atmosphere, taking its shape from that, for the lenticular elongation of the earth's atmosphere, consequent upon the diurnal rotation, must be directly over the earth's equator; while the course of the zodiacal light shows not the slightest affinity to this line. Fifthly, it must be something continuous and unbroken, not from a detached periodic body, either spherical or elongated; for during more than two years' uninterrupted observations, he never failed to see it morning or evening, when the moon or clouds did not interfere. Sixthly, it cannot be from a nebular ring lying between the orbits of Venus and Mercury, as Laplace conjectured, for at midnight, when the ecliptic was at right angles with the horizon, he saw the light simultaneously on both the eastern and western horizon; and at evening and morning it sometimes appeared stretching to the zenith and beyond it. Seventhly, it cannot be from a nebulous body of lenticular shape, reaching to the sun and lying in or near the plane of the ecliptic, as Mairan supposed. Eighthly, the substance of the light cannot be very remote from the earth, inasmuch as its outlines were clearly and decidedly affected by the observer's position, and even by his change of position in a single night. Ninthly, this substance seems to be full of internal commotions. Tenthly, the cause of the phenomenon is a nebulous ring around the earth, perhaps of a similar nature to that which is seen to surround the planet Saturn.—Mr. Jones found the moon to give a zodiacal light, similar to that of the sun, though usually fainter. Sometimes, however, when the moon was full, he saw it as strongly marked as that of the sun ever is. Its greatest breadth along the horizon was upward of 60°, and its greatest height upward of 30°. Of the published charts, 13 refer to the zodiacal light of the moon.

ZOËGA, Georg, a Danish antiquary, born in Dahlen, Jutland, Dec. 20, 1755, died in Rome, Feb. 10, 1809. He was the son of the Lutheran clergyman of his native village, was educated at Göttingen, travelled in 1782 on a numismatic tour in Germany and Italy at the expense of the Danish government, and settled in Rome, was appointed interpreter of modern languages to the propaganda college, and published in 1787 his *Nummi Ægyptii Imperatorii prostantes in Museo Borgiano Velitris* (4to., Rome). Pope Pius VI. commissioned him to explain the obelisks, and in 1800 appeared his great work, *De Origine et Usu Obeliscorum*, bearing the date of 1797. In 1798 he was made consul-general for Denmark in the Papal States, and in 1802 was appointed professor in the university of Kiel, but he never performed the duties of this office, though he received the salary. After this he published a catalogue of the Coptic manuscripts in the library of Cardinal Borgia, and also an account of the antique bass-reliefs still remaining in Rome, under the title of *Li bassi-rilievi antichi di Roma, incisi da Tommaso Piroli* (2 vols., Rome, 1808). In 1817 Welcker published at Göttingen a number of posthumous treatises of Zoëga.

ZOEST, or **Zoust, Gerard**, a German painter, born in Westphalia in 1637, died in London in 1681, went to England about 1656, where, according to Pilkington, he rivalled Sir Peter Lely as a portrait painter, and found abundant employment. He was no favorite of the ladies, being a man of coarse manners.

ZOILUS, an ancient critic, celebrated for the bitterness with which he attacked Homer. He was, according to most authorities, a native of Amphipolis, but according to others of Ephesus, and is said to have begun to be eminent before the rise of Demosthenes, and continued to write after the death of Philip. He assailed the poems of Homer, principally on account of the introduction of fabulous and incredible stories, and from this fact derived the name of *Homeromastix.* Plato and Isocrates came also under his lash, and his writings were so marked by illiberality and asperity, that in ancient times his name had become proverbial for a captious and malignant pretender to criticism. Dionysius of Halicarnassus, however, treats him with much respect, and ranks him among the best critics. The titles of 8 of his works have been preserved, although none of their contents have come down to us. Stories are told of his having perished by a violent death, but nothing certain is known.

ZOLLIKOFER, Georg Joachim, a German clergyman, born in St. Gall, Switzerland, Aug. 5, 1730, died in Leipsic, Jan. 25, 1788. He studied at Utrecht, was settled as pastor at Warten, Switzerland, in 1754, and became in 1758 pastor of the reformed society in Leipsic, in which office he remained till his death. He had a great reputation as a preacher. A collection of his sermons was published at Leipsic in 15 volumes (1789–1804; a part of them translated by the Rev. W. Tooke, 10 vols., London, 1802), and his sermons on the dignity of man in 2 volumes (Leipsic, 1795). He compiled a hymn book, which passed through many editions.

ZOLLVEREIN (Germ. *Zoll*, duty, custom, and *Verein*, union), an association of German states for the purpose of levying uniform customs upon merchandise imported from abroad, and establishing internal free trade. It was contemplated in art. 19 of the compact of the Germanic confederation, and was actually commenced by Prussia, which in May, 1818, proposed to suppress all interior custom houses, and to protect domestic industry and assure revenue to the treasury by levying duties equivalent to 10 per cent. *ad valorem* on all foreign manufactures, of which nothing was to be prohibited, and on this basis to establish reciprocal free trade with other states. On Oct. 25, 1819, the principality of Schwarzburg-Sondershausen united with Prussia, and at various times other governments have since joined the union, until it now (1862) embraces all the members of the Germanic confederation except Austria, the cities of Bremen, Hamburg, and Lübeck, Mecklenburg, Schleswig-Holstein, Lauenburg, and Liechtenstein, its aggregate population, according to the census of Dec. 3, 1858, being 33,542,467. Several states of secondary importance, including Bavaria and Würtemberg, for a time resisted the movement, and independent unions were established among some of them; but the superior advantages of the larger association gradually induced them all to merge in it their separate systems and establishments, the last states to come in being Hanover, Schaumburg-Lippe, and Oldenburg, the first by treaty of Sept. 7, 1851, the second of Sept. 25, 1851, and the third of March 1, 1852; all three became members of the Zollverein on Jan. 1, 1854. By a new special treaty of April 4, 1853, between the members of the union, it is to last till Jan. 1, 1867. Separate treaties also equalize the internal taxation of various members of the union. The maximum of duties on imports, according to the Prussian tariff of 1818, remains at 10 per cent. *ad valorem*, but the special imposts are varied from time to time; thus since 1851 the raw materials of manufacture have been made free or comparatively so. Each state guards the frontiers which divide it from foreign countries, and provides for the collection of duties within its borders. The receipts from this source are paid into a common treasury, out of which the expenses of guarding and collecting are reimbursed. Export and transit duties are also levied. The net revenue is distributed in proportion to population, for which purpose a general census is taken every three years; in this distribution of the urban population the city of Frankfort is reckoned at 4⅖, and the population of Hanover, Schaumburg-Lippe, and Oldenburg at 1¾ its actual number. Each state now receives a greater revenue from customs than it did before joining the Zollverein. The plenipotentiaries of the respective states meet in June every year to settle accounts and consider proposed changes in the tariff. The following table exhibits the progress of the foreign commerce of the Zollverein; the values are in Prussian thalers:

Years.		Imports.	Exports.	Population.	Value per head.
1834–'38	Average.	127,232,226	157,655,610	24,600,000	11.5
1839–'43		220,572,088	176,770,907	26,700,000	13.3
1844–'46		216,925,154	174,719,912	29,000,000	13.5
1850–'52		187,888,506	178,808,445	30,200,000	12.1
1853........		203,931,989	251,380,676	32,500,000	14.0
1854........		269,119,053	334,159,735	32,600,000	20.4
1855........		315,764,875	308,567,411	32,700,000	19.1
1856........		350,105,738	318,807,951	33,000,000	20.3
1857........		354,306,381	353,093,127	33,200,000	21.3
1858........		321,528,183	350,830,702	33,500,000	20.1

For the years 1847–'9 there are no official returns. Among the articles whose production has greatly increased in the Zollverein, iron is remarkable. The total production of Prussia, Bavaria, Saxony, Würtemberg, Hanover, Baden, and the grand duchy of Hesse, was in

1850, 3,708,432 cwt., and in 1858, 10,207,098 cwt. At the same time the importation of foreign iron and iron wares increased from 2,455,000 cwt. in 1850 to 6,587,000 cwt. in 1858. The following table shows the gross receipts in thalers of the Zollverein for duties of all descriptions·

Years.	Imports.	Exports.	Transit.
1850	23,022,736	297,162	537,150
1851	23,216,951	264,989	445,375
1852	24,327,930	329,920	367,165
1853	22,050,044	295,281	499,439
1854	23,024,723	245,431	416,617
1855	26,043,782	214,063	617,279
1856	26,358,054	227,085	380,256
1857	26,433,225	198,613	384,878
1858	28,302,339	242,348	380,504
1859	23,475,011	251,001	402,144

ZONARAS, Joannes, a Byzantine historian and theologian, born in Constantinople, flourished in the 12th century, and under Alexis Comnenus was commander of the imperial body guard and first private secretary to the emperor. During the reign of John Comnenus he entered a monastery on Mount Athos, and there spent the remainder of his life in retirement and study. His principal works are "Annals" from the creation of the world to A. D. 1118, and "An Exposition of the Sacred Canons, and those of the Apostles, Councils, Synods, and Ecclesiastical Fathers."

ZONE (Gr. ζωνη, a belt or girdle), in the mathematical sense, the circular belt or portion of the surface of a sphere lying between any two parallel circles of the latter, or the convex surface cut off to one side by a circle of the sphere. Since, owing to the inclination of the earth's equator to the ecliptic or plane of the sun's path at an angle of 23° 28′, the tropics have respectively this distance N. and S. of the equator, and since when the sun is over either tropic its rays are for the time completely withdrawn from the surface within a like distance of the opposite pole, there are thus naturally established 4 parallel circles of the earth, the 2 tropics and 2 polar circles, which with the equator itself divide the entire surface into 6 belts or portions, corresponding in pairs N. and S. of the equator. As within these several pairs of belts the relative lengths of day and night follow a different law, while the character of the seasons and climate generally also differ, these portions of the earth's surface have been designated specifically as the zones of the earth. Of these, the two lying on both sides of the equator, and bounded N. and S. respectively by the tropics, are termed the torrid or burning zones; these have continual alternation of night and day, and over any point within them the sun is vertical twice yearly. The zones lying between a tropic and polar circle on either side of the former, are respectively the northern and southern temperate zones; these also have continual alternation of night and day, but the sun is never vertical to any part of them. The portions within the polar circles respectively are the northern and southern frigid or frozen zones; throughout these zones there is in each year a period greater than 24 hours, but not in any part exceeding 6 months, during which the sun does not rise, and a corresponding period during which it does not set. The names of the torrid and frigid zones are strictly expressive of the character of their climates; the so called temperate zones are characterized in fact by alternation of hot and cold seasons, though not in either direction reaching generally the respective extremes presented by the others. Further, both in the relative lengths of day and night, and in the general temperature, the transition from any zone to another is gradual; so that the northern temperate zone, for example, presents along its northern and southern borders nearly the excessive cold and heat of the zones adjacent.

ZOOLOGY (Gr. ζωον, an animal, and λογος, discourse), the science which treats of the natural history and classification of the animal kingdom. Its various subdivisions, from Aristotle to Agassiz, have been noticed under many heads, the principal among which are Amphibia, Animal, Animalcules, Annelida, Arachnida, Articulata, Crustacea, Entomology, Entozoa, Ethnology, Herpetology, Ichthyology, Invertebrata, Malacology, Mammalia, Ornithology, Polyp, Spider, and Vertebrata; the distinguishing characters will be found under the several classes, orders, and families, and under Birds, Comparative Anatomy, Fishes, Insects, Mollusks, and Reptiles. Cuvier's system of zoological classification may be found in the article Animal. For convenience of reference, and as representing the latest published views of a distinguished naturalist, it may be well to introduce here the system proposed by Agassiz in his "Essay on Classification." He adopts the 4 branches proposed by Cuvier, for reasons given in the articles Invertebrata and Vertebrata, as follows: I. *Radiata;* with the classes: 1, *polypi*, including the orders actinoids and halcyonoids, as limited by Dana; 2, *acalephæ*, with the orders hydroids (including *siphonophoræ*), *discophoræ*, and *ctenophoræ;* 3, *echinodermata*, with the orders crinoids, asteroids, echinoids, and holothurians. II. *Mollusca;* with the classes: 1, *acephala*, with the orders *bryozoa* (including the *vorticellæ*), brachiopods, *tunicata*, and *lamellibranchiata;* 2, *gasteropoda*, with the orders *pteropoda*, *heteropoda*, and *gasteropoda* proper; 3, *cephalopoda*, with the orders *tetrabranchiata* and *dibranchiata*. III. *Articulata;* with the classes: 1, *vermes* or worms, with the orders trematods (including cestods, *planariæ*, and leeches), nematoids (including *acanthocephala* and *gordiacei*), and annelids; 2, *crustacea*, with orders *rotifera*, *entomostraca* (including cirripeds), tetradecapods, and decapods; 3, *insecta*, with orders myriapods, arachnids, and insects proper. IV. *Vertebrata;* with classes: 1, myzonts, with orders myxinoids and cyclostomes; 2, fishes proper, with orders ctenoids and cycloids; 3, ganoids, with orders cœlacanths, acipenseroids, and sauroids, and (doubtful) the siluroids, plectognaths, and lophobranchs; 4, selachians, with orders *chimæræ*, *galeodes*, and *batides;* 5, amphibians, with orders *cæciliæ*, *ichthyodi*, and *anura;* 6, reptiles, with orders *serpentes*, *saurii*, *rhizodontes*, and *testudinata;* 7, birds, with orders *natatores*, *grallæ*, *rasores*, and *insessores* (including *scansores* and *accipitres*); 8, *mammalia*, with orders *marsupialia*, *herbivora*, and *carnivora*. These are not given as matured results, but rather as suggestions for the appreciation of which a great amount of anatomical and embryological investigation must yet be made. In the above arrangement the classes and the orders within the classes are placed in the ascending scale from the first to the last, which is the highest.

ZOOPHYTES (Gr. ζωον, an animal, and φυτον, a plant), a term formerly applied to all plant-like animals, including *anthozoa* and *bryozoa*. The latter are now known to belong to the lowest order of *acephala*, the lowest class of mollusks; the former, or zoophytes proper, so called from the flower-like expansion of the tentacles of the animals, are synonymous with polyps, the lowest class of radiates, and include the actinoids and halcyonoids of Dana. The zoophytes have been sufficiently described under CORAL and POLYP; the sea anemone, one of the largest, most common, and most beautiful in northern waters, has been noticed under ACTINIA. Zoophytes bear a strong external resemblance to flowers, and it is not surprising that the older naturalists mistook them in many instances for marine plants; they are, however, true animals.

ZORILLA. See SKUNK.

ZOROASTER. By this name, following the example of the Greeks, we are accustomed to call the founder of the ancient Persian religion; the true form of the word is Zarathustra, which has been variously explained as meaning gold star, possessor of golden camels, goldsmith, and excellent singer or poet; none of these interpretations is well established, nor is the point one of consequence, since the word is doubtless the prophet's proper name, and not a symbolical or descriptive title. Respecting his period, his personal history, and the details of his activity as reformer of the earlier religion of his people, we have almost no trustworthy information. The discordant notices of the Greek writers, to the effect that he lived 600 or 5,000 years before the Trojan war, or 6,000 years before Plato, serve only to show that they were able to obtain no positive knowledge of him; and that he was, as Berosus calls him, the founder of a Median dynasty in Babylon, 2200 B. C., is too palpable an error to need confutation. That he was by birth a Bactrian is certain; and the native tradition, ancient and modern, declares him to have been the son of Pourushaspa, and to have lived under a king Vistaspa (Gushtasp, Hystaspes), who accepted and favored the general adoption of his doctrines. This king was at one time regarded as identical with the father of the first Darius, and Zoroaster was accordingly assigned to the 6th century B. C.; but this opinion is utterly mistaken, and is now entirely given up. The Persian traditions make Vistaspa the last of the line of Kaianian princes, ruling in Bactria; and as the Assyrian conquest of Bactria is said to have taken place 1,200 years B. C., it has been concluded, with much plausibility, that Zoroaster's life must have preceded that event, perhaps by no long interval. This conclusion is strengthened by the fact that the Zoroastrian scriptures betray no acquaintance with any of the nations dwelling in or near the western parts of Iran, as the Medes, the Persians, the Assyrians, &c. It was doubtless after the prophet's death that his religion was accepted by the remoter peoples of Iranian extraction. His aspect in the *Zendavesta* is rather mythical than historical; he appears there as a being of supernatural endowments, and as receiving from the supreme divinity by personal interview, by inquiry and reply, the truths which he is to communicate to men. The earliest portions of the Avestan text, the *Gathas*, may perhaps go back in part to his own time. (See ZENDAVESTA.) The character of Zoroaster's religious reform, and the doctrines he promulgated, have been set forth in the article GUEBRES.

ZORRILLA Y MORAL, JOSÉ, a Spanish poet, born in Valladolid, Feb. 21, 1817. He was educated in the seminary of the nobles at Madrid, entered the law school of Toledo, and was afterward sent to Valladolid, but devoted himself exclusively to literary studies, and in the periodical entitled *El artista* made his first appearance in print as a poet. His father, displeased with his occupations, sent for him, and placed him under the charge of a muleteer to be brought home; but on the way he managed to escape on a horse which he took from one of his relatives without permission of the owner, and with a few reals in his pocket made his way to Madrid. Here he lay concealed for some time, but on Feb. 15, 1837, at the funeral of the poet Larra, suddenly excited a great sensation by an elegy on the dead poet which he repeated at the grave. In a few months his first volume of poetry appeared, and from that time the literary reputation of Zorrilla has steadily increased. He has published *Cantos del trovador, coleccion de leyendas y tradiciones historicas* (3 vols., Madrid, 1841), and *Floras perdidas* (Madrid, 1843); and in 1847 an edition of his complete works appeared at Paris in 2 vols. He has written a number of comedies, of which that entitled *El zapatero y el rey* is the most popular. He has of late resided partly in Paris and partly in Brussels, and has written a long romantic poem entitled *Granada* (2 vols., Paris, 1853–'4), generally regarded as his masterpiece. A new edition of his complete works appeared at Paris in 1853, in 3 vols.

ZOSIMUS, a Greek historian, flourished in the earlier part of the 5th century. He wrote a history of the Roman empire, in 6 books, bringing it down to the year 410. This work, which is still extant, is mainly an abridgment from early historians, and written in a concise and pure style. Being a pagan, Zosimus was rather severe in his strictures on the Christian emperors, but he cannot justly be accused of a deliberate misrepresentation of facts or characters. The best editions of Zosimus are by Reitemeier (Leipsic, 1784) and Bekker (Bonn, 1837).

ZOUAVES (Arab. *Zwawa*), a body of troops in the French service, deriving their name from a tribe of Kabyles living among the Jurjura mountains in Algeria. Previous to the capture of Algiers by the French in 1830, the inhabitants of this region, noted throughout northern Africa for their warlike spirit and skill in the use of arms, had been for many ages employed as mercenaries in the pay of different Barbary states; and the conquerors, finding a body of these troops in the service of the dey, adopted them into their own service under the name of zouaves, in the hope of reconciling the antipathy between natives and foreigners. For this purpose two battalions were organized, in which French and native soldiers were distributed in certain proportions among all the companies, and which were recruited by voluntary enlistments, and armed and disciplined in the European fashion, the distinctive Arab dress being alone retained. The experiment not proving altogether successful, the corps was reorganized by the formation of distinct companies of Frenchmen and Arabs; and in 1837 it was divided into 3 battalions, under the command of Col. (afterward Gen.) Lamoricière. To the exertions of this officer, and of his successor in command, Gen. Cavaignac, is to be attributed the great efficiency displayed by the zouaves in the many bloody conflicts which preceded the final conquest of Algeria. Long before the consummation of this event the native element had been effectually eliminated from their ranks, and subsequent to 1840 they were to all intents and purposes a body of European troops uniformed in the picturesque garb of the Arab soldiery. In the Crimean campaign the zouaves, by their reckless bravery and admirable discipline, proved themselves the *élite* of the French infantry; and during the Italian campaign of 1859, at Magenta and Solferino, they fully sustained their reputation. In 1852 they were reorganized into 3 regiments of 3 battalions each, to which in 1855 a 4th regiment of zouaves of the imperial guard was added; and they now number about 15,000 men, recruited from the rank and file of other regiments, although officers of the line are frequently found serving among them as privates. They are armed with carbines having sword bayonets, and their dress consists of a loose jacket and waistcoat of dark blue cloth, ornamented with yellow braid, madder-colored Turkish trowsers, and a Fez cap of the same color, having a yellow tassel and surrounded by a green turban, a sky-blue sash of wool, leggings of yellow leather, and white gaiters. The zouaves of the imperial guard are distinguished from the others by a white turban. The officers are uniformed as hussars. "The zouaves," says Captain (now Major-General) G. B. McClellan in his report on the European armies prepared for the war department, "are all French; they are selected from among the old campaigners for their fine physique and tried courage, and have certainly proved that they are what their appearance would indicate, the most reckless, self-reliant, and complete infantry that Europe can produce. With his graceful dress, soldierly bearing, and vigilant attitude, the zouave at an outpost is the *beau idéal* of a soldier. Their movements are the most light and graceful I have ever seen; the stride is long, but the foot seems scarcely to touch the ground, and the march is apparently made without effort or fatigue. They have, combined with all the energy and activity of other French troops, that solid *ensemble* and reckless, dare-devil individuality which would render them alike formidable when attacking in mass, or in defending a position in the most desperate hand-to-hand encounter. Of all the troops that I have ever seen, I should esteem it the greatest honor to assist in defeating the zouaves."—Several of the volunteer regiments in the United States service have adopted the dress of the zouaves, and many others are called zouaves which have no claim to the name. The brilliant and picturesque uniform has proved an inducement to enlist, as well as an incitement to bravery; and no troops have been more frequently commended for gallant service than those zouave regiments whose appearance resembles most closely that of their European prototypes.

ZRINYI, Miklós, count, a Hungarian general, born in 1518, killed at Szigeth near the Drave, Sept. 7, 1566. When only 12 years old, Charles V. gave him a gold chain for his conduct during the siege of Vienna. He afterward became ban of Croatia, and at the siege of Szigeth with 3,000 men he resisted Solyman the Magnificent and Mohammed Sokolovich, his grand vizier, at the head of 65,000, for more than a month. After the Turks had taken the city, Zrinyi, setting it on fire, threw himself into the castle, and there maintained the defence, fighting day and night, and refusing to surrender though Solyman threatened to kill his son, whom he pretended to have in his power. Solyman died of rage, but Sokolovich kept up the siege, and during the final assault the defenders, reduced to 600, rushed forth and fell fighting. In this siege the Turks lost more than 20,000 men.

ZSCHOKKE, Johann Heinrich Daniel, a German author, born in Magdeburg, March 22, 1771, died in Biberstein, Switzerland, June 27, 1848. In 1788 he joined a company of strolling players, with whom he remained for some time as play writer. Afterward he went to the university of Frankfort-on-the-Oder, studied theology, history, belles-lettres, and political economy, and in 1792 became a private teacher in that city. He published several dramatic pieces, among which were his *Abällino, der grosse Bandit* (Berlin, 1793), and *Julius von Sassen* (Zürich, 1796), by which he acquired a higher reputation than their merits warranted. In 1795 he applied for a professorship, but it was refused on account of a treatise which he had written against the edict of the government in respect to religion. Hereupon he made a journey through Germany, Switzerland, and France, and finally settled in Reichenau in the canton of the Grisons, where in conjunction with Tscharner he started a school, which became so prosperous and was so highly esteemed that Zschokke received the right of citizenship. In 1798 he repaid this favor by his work entitled *Geschichte des Freistaats der drei Bünde in Rhätien*. In the same year his school was broken up in consequence of his advocating the union of the Grisons with the Helvetic republic established under the French sanction, to which the inhabitants of the canton were opposed. Tscharner and Zschokke then went to Aarau, the seat of the Swiss government. The former soon returned, but the latter, after acting for some time as chief of the department of education, was sent with full powers as government commissioner to the canton of Unterwalden, to which he restored peace. His *Historische Denkwürdigkeiten der schweizerischen Staatsumwälzung* gives a key to the proceedings of this period. His authority was subsequently extended over the cantons of Uri, Schwytz, and Zug. Among his writings during this period, his *Geschichte vom Kampfe und Untergange der schweizerischen Berg und Waldcantone* (Zürich, 1801) deserves special notice. In 1801 the central government made him commissioner, whereupon he organized the Italian bailiwicks of Lugano and Bellinzona, with the best results; and on his return he was made ruler of the canton of Basel, where the opposition to the land tax and the tithes had assumed a revolutionary character. Throwing himself into the midst of an armed multitude, he was enabled to pacify them by his eloquence. When Aloys von Reding at the head of the central government had determined in 1801 to restore the old federal union, Zschokke resigned his offices, and retiring to the castle of Biberstein in Aargau, resumed his studies. On the establishment of a new federal union by Bonaparte in 1803, he was recalled from private life, and in 1804 presented by the government of the canton of Aargau with the right of citizenship, and appointed a member of the council of forests and mines. In the latter year he started a journal called *Der aufrichtige und wohlerfahrene Schweizerboten*, which was widely circulated and exerted great influence, and in 1807 the *Miscellen für die neueste Weltkunde*, which lasted until 1813. In 1829 he resigned his place as inspector of forests and churches, in consequence of accusations brought against him for an article in the *Schweizerboten*. He continued, however, in several of his other offices, and was subsequently reinstated in the church council. The last years of his life were spent in literary pursuits. Among his most important works are his *Geschichte des baierischen Volks und seiner Fürsten* (4 vols., Aarau, 1813–'18), and *Des Schweizerlandes Geschichte für das Schweizervolk* (Zürich, 1822), the latter of which is generally regarded as his best. His novels and tales are exceedingly numerous; among the best are *Der Creole*, *Alamontade*, *Jonathan Frock*, *Oswald oder das Goldmachersdorf*, and *Meister Jordan*. He superintended an edition of his historical writings under the title of *Ausgewählte historische Schriften* (16 vols., Aarau, 1830), and several collections of his selected novels and tales. The collection of his *Sämmtliche Schriften* (Aarau, 1825) embraces 40 volumes. The poetical and dramatic works of Zschokke are hardly above mediocrity. By far the most popular of his works is his *Stunden der Andacht*, consisting of meditative and devotional essays. A selection from this work was translated by Frederica Rowan, at the request of Queen Victoria after the death of Prince Albert, entitled "Meditations on Death and Eternity" (London, 1862). His history of Switzerland was translated by Francis George Shaw (1 vol. 12mo., New York, 1855), and a selection from his tales by Parke Godwin (1 vol. 12mo., New York).

ZUCCARELLI, Francesco, an Italian painter, born in Pitigliano, near Florence, in 1702, died in Florence in 1788. He early established himself in Venice as a landscape painter, and by the middle of the century had acquired so wide a reputation in that capacity as to be invited to settle in England. For 20 years he stood at the head of his profession in that country, and in 1773 returned to Florence. Late in life pecuniary embarrassments compelled him to resume his pencil. He was one of the founders of the British royal academy. His works painted in England are considered inferior in composition and coloring to those produced in Venice.

ZUCCARO, Taddeo, an Italian painter, born in S. Angelo, Vado, in the duchy of Urbino, in 1529, died in Rome, Sept. 2, 1566. He repaired while a boy to Rome, where for several years he was employed as a color grinder, and succeeded at the age of 18 in establishing his reputation as a fresco painter. He executed many works on a considerable scale, of which the most celebrated are a series of frescoes in the palace at Caprarola illustrating the glories of the Farnese family, and which were engraved in 45 plates by J. J. Prenner (fol., Rome, 1748–'50). He was much employed by the duke of Urbino and Popes Julius III. and Paul IV. His popularity, according to Lanzi, is explained by the fact that he never painted any thing which could not be readily understood.—Federigo, an

Italian painter, brother of the preceding, born in S. Angelo in 1543, died in 1609. He was instructed in painting by his brother, many of whose incomplete works he finished, and whose style he followed. Having executed for the cupola of the cathedral in Florence a composition containing more than 300 figures 50 feet high, and which according to Lanzi was remarkable for little beside its size, he was invited by Gregory XIII. to Rome to paint the ceiling of the Cappella Paolina in the Vatican. Being obliged in consequence of feuds with the papal courtiers to leave Rome, he repaired in 1574 to England, and painted portraits of Queen Elizabeth, Mary queen of Scots, and other distinguished personages. In 1586–'8 he executed some important works for Philip II. of Spain in the Escurial, and in 1595 he founded at Rome the academy of St. Luke. His works pleased the popular taste, although inferior to those of the masters of the early part of the 16th century. He was also known as a sculptor, poet, and architect, and wrote a work on art entitled *L'idea di pittori, scultori e architetti.*

ZUG, a central canton of Switzerland, and the smallest of the confederation, bounded N. by the canton of Zürich, E. and S. by Schwytz, and W. by Lucerne and Aargau; area, 91 sq. m.; pop. in 1860, 19,667, nearly all Roman Catholics, speaking the German language. The canton lies in the basin of the Reuss. The N. part of the lake of Zug, a fine sheet of water about 8 m. long and from 1 to 2 m. wide, lies in the canton, while the S. part is in Schwytz. In the S. E. is the little lake of Egeri, of which the outlet, the river Lorze, in its circuitous course drains the canton, passing through the lake of Zug and finally discharging its waters into the Reuss. There are spurs of the mountains of Schwytz on the E. and S. The canton is entirely agricultural, and has a rich fertile soil. Great quantities of fruit are raised, some districts being almost continuous orchards. The lakes abound with fish. Zug was the 6th canton admitted into the confederation, in 1352.—Zug, the capital (anc. *Tugium*), is situated on the E. bank of the lake of Zug, at the foot of the Zugerberg; pop. in 1850, 3,302. It has a college and library, and is surrounded by orchards and vineyards. In 1455 two of the streets fell into the lake.

ZUIDER ZEE. See Zuyder Zee.

ZUINGLIUS. See Zwingli.

ZUMALACARREGUY, Tomas, a Spanish general, leader of the army of the pretender Don Carlos, born in the province of Guipuzcoa in 1789, died from a gun-shot wound, June 25, 1835. He came of a noble family, and at the time of the French invasion in 1808 was studying law in Pampeluna, but immediately left the university and entered the army. Under Mina he served as captain in 1813, and in 1822 commanded two battalions in the division of Quesada in the war between the royalists and the constitutionalists. In 1823, upon the establishment of the absolute monarchy, he was made lieutenant-colonel, and afterward colonel of a regiment of the line in Estremadura and governor of Ferrol. His royalist leanings induced the supporters of the infante Don Carlos to propose to him to declare for the latter during the lifetime of Ferdinand VII.; and though Zumalacarreguy refused this extreme measure, he promised after the death of Ferdinand to recognize no one else than Charles V. as king. For this speech he was tried by a court martial, but acquitted. In 1832, when the army was purged of officers friendly to Don Carlos, he received his dismission, and lived in retirement at Pampeluna. On the death of Ferdinand in 1833 he refused the rank of brigadier-general tendered to him provided he would embrace the cause of the queen. In Oct. 1833, he escaped to the Basque provinces, where the inhabitants had taken up arms for Don Carlos, organized a body of royalist volunteers, and was chosen as the military leader in the northern provinces. Under him the affairs of the Carlists began to assume a hopeful aspect, and in July, 1834, he was joined by Don Carlos himself. On Aug. 1, 1834, he defeated Gen. Rodil in the valley of the Amescoas, on Sept. 7 scattered the queen's forces at Viana, was victorious in October in a battle fought on the plains of Vittoria, and in the spring of 1835 gained a brilliant victory over Valdes after a 4 days' contest in the valley of the Amescoas, the scene of a former triumph. He also conquered Iriarte at Guernica. He was in a career of triumph, having captured several important towns and fortresses, and was prosecuting the siege of Bilboa, the capital of Biscay, when on June 15 he received a mortal wound from a musket ball. His loss was an irreparable blow to the Carlist cause. The name by which he was commonly called was *El tio Tomas*, or "Uncle Thomas." C. F. Henningsen, captain of lancers in the service of Don Carlos, published an account of this campaign under the title of "The most striking Events of a Twelve Months' Campaign with Zumalacarreguy in Navarre and the Basque Provinces" (2 vols. 12mo., London, 1836).

ZUMPT, Karl Gottlob, a German classical scholar, born in Berlin, March 20, 1792, died in 1858. He was educated at Heidelberg, and was appointed teacher in the gymnasium of Werder in 1812, a professor in the Joachimsthal gymnasium in 1821, and professor of Roman literature in the university of Berlin in 1828. He was also for a time professor of history in the royal military academy. In 1831 he made a tour in Italy, and in 1835 another in Greece. Beside his Latin grammar (Berlin, 1818), by which he is best known, and which has been translated into English, he published editions of Quintilian, Cicero, and Quintus Curtius, and treatises on subjects connected with the manners and usages of the Romans.

ZUÑIGA. See Ercilla y Zuñiga.

ZUNZ, Leopold, a German scholar, born at Detmold, Aug. 10, 1794, studied philology at Berlin, was preacher of the Berlin synagogue from 1820 to 1822, was editor of the *Spenersche Zeitung*, one of the principal journals of Berlin, from 1824 to 1832, and was head of the Jewish seminary for teachers in Berlin from 1839 to 1850. He is regarded as having been the first in Germany to treat Hebrew literature in a scientific manner, and the Jewish community of Berlin have bestowed on him an annuity in respect for his services. His principal works are: *Die gottesdienstlichen Vorträge der Juden* (Berlin, 1832); *Zur Geschichte und Literatur* (1st vol., Berlin, 1845); and *Die synagogale Poesie des Mittelalters* (1855).

ZURBARAN, Francisco, a Spanish painter, born in Fuente de Cantos, Estremadura, in Nov. 1598, died in Seville in 1662. He was educated in the school of Juan de Roélas in Seville, and early formed his style on that of Caravaggio. He also gave great attention to draperies, which he never painted without the object before him, and in general made nature his guide in all things. He first brought himself into notice by a series of pictures for the chapel of St. Peter in the cathedral of Seville, illustrating the life of the apostle; and about 1625 he executed his celebrated picture of "St. Thomas Aquinas received into heaven," which is esteemed his masterpiece, and for force of chiaroscuro and correct imitation of nature is one of the finest works in Spain. To this period may also be referred a series of pictures from the life of St. Jerome for the Hieronymite friars at Guadalupe, which are characteristic specimens of his style, and, according to Ford, "from monkish neglect are pure and uninjured." In the course of his life he executed many works for churches and monasteries in Seville, Guadalupe, and Madrid, and subsequent to 1633 shared with Velasquez the honor of being called the king's painter, although it was not until about 1650 that he was employed at court. The king, who used to visit him while at work in his studio, is said on one occasion to have expressed his admiration of Zurbaran by laying his hand upon his shoulder and calling him "painter of the king and king of painters." His works are most numerous and characteristic in Seville, and are rarely met with out of Spain, although the French marshals succeeded in removing a few. Although often called the "Spanish Caravaggio," he was more elevated in mind and manner than that painter, surpassing even Paul Veronese in the substance, texture, and splendor of his velvets and brocades, and resembling Titian in richness of color and depth of tone. Sterling designates him "the peculiar painter of monks, as Raphael is of Madonnas, and Ribera of martyrdoms;" and says: "He studied the Spanish friar with as high a relish as Titian painted the Venetian noble or Vandyke the gentleman of England." He ranks immediately after Murillo and Velasquez, and in coloring is not inferior to either of them.

ZÜRICH, a N. canton of Switzerland, bounded N. by the grand duchy of Baden and the canton of Schaffhausen, E. by Thurgau and St. Gall, S. by St. Gall, Schwytz, and Zug, and W. by Aargau; area, 659 sq. m.; pop. in 1860, 267,641, of whom 254,903 were Protestants, and the greater part of German origin. The canton is in the basin of the Rhine, and all its streams flow into that river. Beside this river, the Thur, Töss, Glatt, Limmat, Sihl, and Reuss are the most important streams. There are several lakes, of which that of Zürich is the principal. The climate is temperate, but liable to frequent and sudden changes. The soil is not very fertile, but is carefully cultivated, and produces moderate crops of grain and considerable quantities of fruit. Some wine is made. There is a large amount of timber. The cattle are of excellent quality. There are no high mountains, but a chain of hills, some of them attaining the height of 2,700 feet, crosses the canton from S. E. to N. W. More than ⅛ of the inhabitants are engaged in manufactures. Silk goods of all descriptions, ribbons, cotton goods and prints, and machinery are the principal branches of manufacture. The schools of the canton are among the best in Switzerland. The German is the prevailing language, though a *patois* of it known as Swiss-German is much used in conversation. The canton is traversed by two railways, one passing from Bern through Zürich to the lake of Constance, and the other connecting Winterthur with St. Gall.—The canton was the 5th in the order of its admission into the confederation; it is the 2d in population and the 7th in extent. It is a representative democracy, its present constitution having been adopted in 1839. The great council or cantonal legislature consists of 212 members, who are elected every 2d year. This council appoints 13 deputies to the federal diet. The executive power is in the hands of the little council, consisting of 25 members, of whom ⅓ are elected by the great council every 2d year. Its president is the chief magistrate of the canton. The great council also elects 11 judges for a term of 6 years, who constitute a supreme court. Every citizen is an elector at 20 years of age, is eligible to office at 30 years, and held to military service till he is 40.—Zürich (anc. *Turicum*), the capital, is situated at the N. W. extremity of the lake of Zürich, at its confluence with the Limmat and the Sihl; pop. in 1850, 17,046. It is divided by the Limmat into two nearly equal parts, the *Grossestadt* on the slope of a hill, and the *Kleinestadt* on a more level tract between the Limmat and the Sihl. Both are surrounded with ramparts and ditches, with bastions and ravelins. Previous to 1848 it was one of the 3 alternate capitals of the confederation, and every 3d year the seat of the federal diet. Its general appearance has been that of a city of the middle ages, but it is undergoing a rapid transformation. The *Münsterhof* or cathedral is a fine old building, dating from the 11th century. Among the other remarkable buildings are the *Frauenmünster*, once a convent, built in the 13th century; the Prediger church; St. Peter's church, noteworthy for its fine tower and clock; the *Wasserkirche*, to which the town library of 45,000 volumes is attached; the city hall; the orphan asylum; the new university buildings; the Wellenberg tower, on an island in the river, one of the ancient dungeons where state prisoners were confined; the arsenal, and the police station and guard house. The university was founded in 1832–'3, and has about 200 students. The city has also an institution for the deaf and dumb and blind, a medical school, an institute of political science, the polytechnic school of the confederation, a museum of natural history, and an excellent botanic garden. The library contains the best collection of the manuscripts of the reformers known. The manufactories of silk, cotton, and machinery are extensive, and the trade flourishing.—Zürich is one of the oldest towns in central Europe. In 1219 it was declared a free imperial city. It was admitted into the Helvetic confederation in 1351, but allied itself to Austria in 1439, and did not return to the confederation till 1450. From 1519 to 1531 Ulric Zwingli preached the doctrines of the reformation in the cathedral. It had previously furnished a secure shelter to Arnold of Brescia. During the reign of Queen Mary it was a place of refuge for many English Protestants, and Miles Coverdale here translated and carried through the press in 1535 the first English version of the Scriptures ever printed. In 1443 Zürich was the scene of a desperate battle between the Swiss and the Austrians, in which the former obtained the victory; and in Aug. 1799, Masséna defeated the Russians in its immediate vicinity.

ZÜRICH, Lake of, a Swiss lake, situated in the cantons of Zürich, St. Gall, and Schwytz, about 25 m. in length from S. E. to N. W., from 1 to 2 m. in width, and about 600 feet deep. Its banks are lined with beautiful and thriving villages, and the hills around it slope gradually to the lake from a height of 2,500 to 3,000 feet, and are covered with farms, gardens, vineyards, and orchards. The Limmat, a clear and rapid stream, issues from its northern extremity and transmits its waters to the Aar. It is divided by the bridge of Rapperschwyl into two parts, called the upper and lower lakes.

ZURITA, Geronymo, a Spanish historian, born in Saragossa, Dec. 14, 1512, died there, Nov. 3, 1581. He was the son of the favorite physician of Ferdinand the Catholic, was educated at the university of Alcala, became chief of the municipalities of Balbastro and Huesca in 1530, subsequently was made fiscal of Madrid, and in 1543 was admitted as a member of the supreme council of Castile, and was sent on a diplomatic mission to Germany. In 1548 he was elected by the cortes of Aragon historiographer of that country. He obtained from the government an order authorizing him to examine all public archives and libraries, and armed with this commission he not only traversed Spain, but also Sicily and Italy. His *Annales de la corona de Aragon* (6 vols. fol., Saragossa, 1562–'80) embraces the period extending from the rise of the kingdom after the Arabian conquest to the death of Ferdinand the Catholic. He wrote several other historical works relating to Aragon.

ZURLO, Giuseppe, count, an Italian statesman, born in Naples in 1759, died there, Nov. 10, 1828. He was a judge, and became minister of finance in 1798, was overthrown by Acton in 1803, in 1809 was minister of the interior under Murat, accompanied the widow of the latter to Trieste, was recalled by King Ferdinand in 1818, and made minister of the interior in 1820, but soon afterward resigned, and henceforth lived in retirement.

ZUTPHEN, a fortified city of Holland, in the province of Gelderland, situated on the Yssel at the mouth of the Berckel, 14 m. from Arnhem; pop. 11,600. It is a very strong fortress; the ancient ramparts are planted with trees, and form a fine promenade. The principal edifices of note are the fine Gothic church of St. Walburga, erected in 1105, which contains a library of very old books; the city hall, with 5 façades; the state hall; and the public weighing house, the tower of which has a chime of 36 bells. The town is of great antiquity. It belonged to the bishops of Utrecht in the 13th century, and in the 14th joined the Hanseatic league. It was taken by the son of the duke of Alva in 1572, by Maurice of Nassau in 1586, and by the French in 1672. It was on the battle field of Warnsfeld, very near this city, that Sir Philip Sidney was mortally wounded in 1586.

ZUYDER ZEE, or Zuider Zee (South sea), a bay or gulf on the coast of Holland, so named because it is separated by the islands of Texel, Vlieland, Ter Schelling, and Ameland from the North sea or German ocean. The Zuyder Zee lies between lat. 52° 15′ and 53° 30′ N., and long. 4° 15′ and 6° E., and is bounded N. W. and N. by the islands already named, E. by the provinces of Friesland and Overyssel, S. E. by Gelderland, and S. and W. by Utrecht and North Holland. Its area is about 12,000 sq. m. A projecting peninsula partially divides it near the middle, and below this it expands to a width of 25 to 36 m. At its S. W. point an estuary called the Y branches off and extends nearly 15 m. into the province of North Holland, which is from 1 to 2 m. wide, and navigable by vessels of considerable size; it forms the harbor of Amsterdam. The shores on the E. and S. E. are several feet above the sea level, but those on the W. are only protected from inundation by strong dikes. The sea is generally deep enough for vessels drawing not over 15 or 18 feet, but there are shoals near the Texel and at the mouth of the Y.—In the time of Julius Cæsar the Zuyder Zee was a low swampy lake called Flevo, and communicated with the North sea by the Yssel, which was not then an affluent of the Rhine, but a river 50 m. long. In 1219 a severe inundation took place in consequence of continued N. W. winds, broke down the dikes, and made considerable encroachments on the land. In 1282 a still more terrible one occurred, which submerged 72 towns and villages and drowned 100,000 persons. By this calamity it became an arm of the sea, and attained its present dimensions.

ZWINGLI, or (as it is often Latinized) Zuinglius, Ulric, a Swiss reformer and patriot, born in a humble hut near the source of the river Thur, in Wildhaus, a mountain village of the Toggenburg, Switzerland, Jan. 1, 1484, fell on the field of Cappel, Oct. 12, 1531. The family was ancient. His father, Ulric Zwingli, a shepherd, was also bailiff of Wildhaus. In moderate circumstances, he was honest, pious, and universally respected. A brother of his father, Bartholomew Zwingli, was pastor in Wildhaus. His mother, Margaret Meili, also had a brother in the clerical order, John Meili, abbot of Fischingen. Ulric was the third son of a family of 8 sons and 2 daughters. In his childhood he was associated with his father as a shepherd. As a child he listened eagerly to the story of the oppression under which his native land had often suffered. He learned patriotism among his earliest lessons, and even as a child would not hear quietly a single word against the fatherland. The stories his mother told him from the Bible, and those his father and the old men related of the heroism of their ancestors, sank equally deep into his heart. His father took the boy to the dean of Wessen, the bailiff's brother, who, pleased with his aptness, placed him under a schoolmaster. When he was 10 years old he was sent to the St. Theodore school at Basel, where his diligence and obedience soon endeared him to all his teachers. In 1497 he was sent to a classical school just opened at Bern by Wolflin Lupulus, a distinguished scholar and poet. The Dominicans there sought to draw him into their convent, which induced his father to call him home. In 1499 he betook himself to Vienna, where he studied philosophy in the university for two years, making rapid progress in learning. In 1502, being 18 years old, he returned to Wildhaus for a short time, and then resumed his studies, especially scholastic theology, in the university of Basel, acting at the same time in the capacity of teacher in the school of St. Martin, by the gains of which he relieved his father from his further pecuniary support. Soon after this he was admitted to the degree of master of arts, of which title however he never made any use, saying: "One is your master, Christ." He was passionately fond of study, but he never suffered himself to become severe and stoical. To prevent this, he cultivated also the lighter and more ornamental accomplishments, especially music. As early as his 18th year the study of the New Testament had awakened in his mind doubts in regard to many of the teachings of the church. These were increased by the instructions of Thomas Wittenbach, a teacher of theology, who in 1505 came from Tübingen to Basel, and around whom Ulric and all the young students gathered. In 1506, being 22 years of age, he was ordained by the bishop of Constance, and the same year became pastor of the large parish of Glarus, not far from his birthplace. At this time the king of France, the duke of Milan, and the pope were seeking to draw the brave Swiss shepherds into the foreign military service. Zwingli's heart was aroused, and he labored with tongue and pen to arouse his countrymen to recover and maintain their ancient honor. In 1510 he wrote his noted poetic fable, in which he represents the confederacy under the symbol of an ox led astray by artful cats, though warned by faithful dogs, by which means the ox lost his liberty. Twice during this time he was ordered by his government to accompany the troops of his canton in the Italian war. He first went with the confederate troops against Louis XII. of France; and two years later, when Francis I. undertook to reconquer the duchy of Milan, Charles of Austria, king of Spain, called upon the Swiss for help, and Zwingli accompanied the soldiers of Glarus through the campaign as chaplain. They were defeated; and 5 days after the battle, Sept. 8, 1515, Zwingli delivered an address to the Swiss, exhorting them no more to expose their honor and their lives in so foolhardy a way. In 1516 the king of France again used money and flattery to enlist the confederates in his favor, and, in spite of Zwingli's efforts, succeeded even in Glarus, where the French party gained the ascendency. Zwingli withdrew to Einsiedeln, where he accepted a subordinate vicarship. During his 10 years' ministry at Glarus he had diligently studied the New Testament in the original Greek, committing to memory the epistles of St. Paul, and advancing himself and his parishioners in its knowledge. At Einsiedeln he had leisure to continue his favorite study. Here he committed to memory the remaining portions of the New Testament, and afterward also portions of the Old. His opposition to several of the teachings and practices of the church grew daily more decided. The convent of Einsiedeln possessed an image of the Virgin of which miraculous stories were told, and over the convent gate was written: "Here the full forgiveness of all sins is to be obtained." The legends and the inscription stirred Zwingli to indignation. He preached Christ as the only sacrifice and ransom for sin. To the pope's nuncio, who called him to account, he said: "With the help of God will I go on preaching the gospel, and this preaching will make Rome totter." His efforts were victorious. The governor caused the inscription to be blotted out from the gate, and ordered the relics which the pilgrims revered to be buried; and the new doctrine prevailed. In the beginning the evangelical movements in Germany and Switzerland were entirely independent of each other. "I began," said Zwingli, "to preach the gospel in the year of grace 1516, that is, at a time when the name of Luther had never been heard among these countries. It was not from Luther that I learned the doctrine of Christ; it was from God's word. If Luther preaches Christ, he does as I do; that is all." A worthy priest on one occasion said to him: "Master Ulric, they tell me you have gone into the new error, and that you are a follower of Luther." "I am no Lutheran," said Zwingli, "for I understood Greek before I had heard the name of Luther;" intimating thereby that the study of the Greek Testament had taught him the necessity of a reformation. D'Aubigné has correctly said: "Zwingli did not communicate with Luther. Doubtless there was a bond of communion between both these men; but we must seek it above this earth. Their communion was in God."—In 1518 the cathedral church in Zürich became vacant, and on Dec. 11 Zwingli was elected to it, and henceforth Zürich became the centre of power for the reformation of Switzerland. On New Year's day, 1519, he entered the pulpit the first time, with an immense crowd before him. "To Christ," cried he, "to Christ will I lead you—to the source of salvation. His word is the only food I wish to furnish to your hearts and lives." He went on to expound the Gospel according to St. Matthew, chapter by chapter, and later the other Gospels, the Acts, and all the epistles in the same way. "The life of Christ," he said, "has been too long hidden from the people." He attacked with equal firmness the vices of all ranks and stations. On every Friday he explained the Psalms for the peasants who came in to market on that day. Here, as before at Glarus, next to his love for the gospel was his patriotic love for the fatherland. He reproved all those who for flattery and money lent themselves as tools to foreign powers. He charged them with selling their own flesh and blood. "The cardinal of Sitten," he exclaimed, "who recruits for the pope, with right wears a red hat and cloak; you need only wring them and you will behold the blood of your nearest kinsmen flowing from them!" Beside his love of country, the necessity of constantly opposing this mercenary tendency among the Swiss may explain the large element of patriotism which everywhere manifested itself in Zwingli's life and acts. Piety and patriotism were one life in him. His numerous labors at Zürich injuring his health, he repaired to the baths of Pfeffers; but hearing that the plague had broken out in Zürich, he hastened back to his flock. He was soon himself seized by the plague, and given up to die. During his sickness he composed three beautiful hymns, full of poetry and faith. He recovered, inspired with new devotion to his work. Flattery and indirect bribes, as several times before, were plied to divert him from his purposes. A cardinal and several nuncios proposed to raise his pension from 50 to 100 florins, on condition that he should preach no more against the pope. "We are not reproached," said he, "as apostates or as rebels, but flattered with high titles." In March, 1522, the outward church service was considerably altered, and some ceremonies were dropped. The bishop stoutly resisted the change, appealing to the council to preserve the ceremonies of the church; but Zwingli triumphed in a discussion before the council. Combinations were formed against him, and a plot was even laid to take his life by poison. He was made acquainted with the fact, and warned not to eat any thing offered him except what his own cook prepared. The council of Zürich placed a guard around his house every night. In July of the same year he had even a more decided victory in a discussion with the priests before the council; as a result evangelical preaching, which had only been allowed, was now enjoined. In July, 1522, Zwingli drew up a petition to the bishop, signed by himself and 10 friends of Zürich and Einsiedeln, asking that free way be opened through the cantons for the gospel, and that the law imposing celibacy upon the priests be abolished. This kindled a fire. Myconius, who favored it, was banished by the diet from the country. At Lucerne Zwingli was burned in effigy. With the hope of allaying the growing troubles, the council appointed another religious conference in Feb. 1523, at which pastors, curates, and preachers were invited to take an active part. Zwingli presented 67 theses for consideration. The discussion ended in the complete triumph of the reformer and his friends. Zwingli contracted marriage, April 2, 1524, with Anna Reinhard, widow of a distinguished magistrate, who proved to him a pious and affectionate wife. A new trouble now arose. The Anabaptists desired Zwingli to establish a community of only true believers, demanded the abolition of tithes, and insisted upon all kinds of freedom of the flesh under cloak of freedom of the spirit. They ran into such riot of fanatical excesses and crimes that they became dangerous to the state, and had to be dealt with by the civil authorities. Zwingli wrote his "Tract on Baptism," against their tenets. A public discussion was held with them; but the movement was wild, and continued for a long time to harass both church and state. In 1528 Zwingli was called to take part in the disputation at Bern, where Haller was laboring in the cause of the reformation. He went accompanied by several German and Swiss theologians, and an escort of 300 men. The disputation continued through 18 sessions. At the close 10 articles favoring the reformation, drawn up by Haller, were subscribed by the majority of the clergy. In 4 months that entire canton was fraternally united with Zürich. Basel followed in Jan. 1529; psalms in German began to resound in the churches; and on April 1 public worship was arranged after the example of Zürich. St. Gall and Schaffhausen were also greatly moved. To this part of Zwingli's life belongs the well known difference between the German and Swiss reformers on the subject of the Lord's supper. As early as 1527 pamphlets began to pass between them. Luther wrote violently and warmly; Zwingli replied calmly and coolly. Philip, landgrave of Hesse, desirous above all to reconcile these differences and bring the reformers together, invited all the theologians of the differing parties to meet in friendly conference at Marburg. The conference began Oct. 2, 1529; and it ended without full reconciliation. At the close Zwingli was in tears, exclaiming: "Let us confess our union in all things in which we agree; and as for the rest, let us remember that we are brothers." "Yes, yes!" exclaimed the landgrave, "you agree. Give, then, a testimony of unity, and recognize one another as brothers." "There is no one upon earth with whom I more desire to be united than with you," said Zwingli, approaching the Wittenberg doctors. Œcolampadius, Bucer, and Hidio said the same. "Acknowledge them, acknowledge them as brothers," continued the landgrave. For a moment it seemed as if they would unite. Luther himself relates that Zwingli, bursting into tears, approached him, holding out his hand. Luther rejected him, repeating over and over: "You have a different spirit from ours!" After some further consultation, terms of mutual peace and good will, if not of unity, were agreed upon, and they signed articles drawn up by Luther himself at the request of both parties, stating the points on which they had all agreed. Zwingli returned to Zürich Oct. 19, 1529, only to find new troubles in his fatherland. Between friends and foes of the reformation the lines had now been drawn. Three cities and cantons stood on one side, and five cantons on the other. The reformed free cities demanded: 1, that their calumniators should be duly punished; 2, that the poor people, who had been driven from house and home on account of their faith, should be permitted to return; 3, that the religious doctrines of one district should be tolerated in others. To these demands the five Catholic cantons, Schwytz, Uri, Unterwalden, Lucerne, and Zug, would not agree. The Zürichers resolved to obtain their rights by force. Zwingli favored prompt warfare. Bern also favored forcible measures, but recommended first only a withdrawal of the means of subsistence from their opponents, a measure which only exasperated them. A treaty of peace, concluded at Cappel, June 25, 1529, did not long stand sacred. Zwingli was filled with apprehension. When the famous comet of 1531 became visible, he gazed at it earnestly from the churchyard of the great minster. "What can it portend?" said the abbot, George Müller, to him. "Why, dear George," answered Zwingli, "it will cost me and many good men the sacrifice of our lives. The church will be involved in great distress." Even Zürich was not free from enemies; and Zwingli blamed the people for suffering such even to be elected into the council. Discouraged, he proposed to withdraw from the city, but yielded to their entreaties, and consented to remain. Ministers passing through the Catholic cantons were arrested, and one, Jacob Kaiser, was burned. To punish these acts, the reformed cantons cut off their supplies, whereupon the Catholics commenced hostilities. On Oct. 9 a company of soldiers from Lucerne passed over the borders and committed depredations. On the 10th vessels laden with soldiers sailed up the lake of Zug, and 8,000 men came to rendezvous in Zug. This took Zürich by surprise; but they gathered their forces, and Zwingli received orders to accompany the army as chaplain. He was discouraged, yet was not without faith. "Our cause," said he to his friends, "is a righteous one, but badly defended. It will cost me my life, and the life of many an upright man, who wishes to restore to religion its original purity, and to his country its ancient morals. But God will not forsake his servants; he will help even when you believe all is lost. My confidence is in him alone. I submit myself to his will." The odds were great, 8,000 men against 1,900, and the conflict terrible. After the battle had begun, the captain of the arquebusiers proposed to await on the heights with the banner the arrival of the reënforcements that were coming from Zürich. Zwingli opposed this. He could not look on while his brethren were shot down in battle. "In the name of God," he exclaimed, "will I go to them, to die with them, or to aid in their deliverance." The Zürichers were brave, but too few; and their enemies prevailed. While stooping down to console a dying soldier, a stone, hurled by the vigorous arm of a Waldstetter, struck Zwingli on the head, and closed his lips. He rose again, when two blows upon the leg struck him down. Twice more he sprang up; but a fourth time he was thrust by a lance, when he staggered and fell beneath his wounds. He yet lifted his head, exclaimed: "What evil is this? They can kill the body, but they cannot kill the soul!" and fell exhausted backward. Prowling over the field after the battle in search of plunder, two soldiers came near to the reformer without recognizing him. They asked him whether he desired a priest to confess. He could not speak, but gave the sign, "No." They told him that, as he could not speak, he should at least think in his heart of the mother of God, and call upon the saints. Zwingli shook his head, and kept his eyes fixed on heaven. The soldiers, now infuriated, began to curse him, adding: "We doubt not you are one of the heretics of this city." A fire had been kindled near the spot; and one of the soldiers, curious to know who it was, turned Zwingli's face toward the light. Suddenly he dropped him surprised, saying: "I think it is Zwingli." At that moment Captain Fockinger, a mercenary from Unterwalden, drew near, having just heard the last words of the soldier. "Zwingli!" he exclaimed, "that vile heretic

Zwingli! that rascal! that traitor!" Then raising his sword, he struck the dying reformer on the throat, exclaiming in a violent passion: "Die, obstinate heretic!" The body lay on the field over night. In the morning, at the demand of a mob, it was tried, formally condemned to be quartered for treason against the confederation, and then burned for heresy. The sentence was carried out by the executioner of Lucerne. The ashes were mingled with the ashes of swine, and the furious multitude, rushing upon the remains, flung them to the winds of heaven.—Zwingli has been censured for his confidence in the virtue of the civil arm. He believed that the fatherland belonged to Christ and the church, and must be defended for their sake; and that Switzerland could only give itself to Christ so far and so long as it was free. He was a man of fine appearance, prepossessing manners, polite address, pleasing conversation, extensive and sound learning, and brilliant genius. He has been represented as having been, more than any other of the reformers, radical and revolutionary in his reformatory movements; but Dr. Ebrard in his work on "The History of the Doctrine of the Lord's Supper," shows that this charge "is no better than a pure fiction of fancy, or theological prejudice;" that Zwingli was fully as conservative as Luther, and much more so than Calvin, in the matter of doctrine and worship. Among all his writings, Zwingli has left no symbol of faith, no system of positive theology. His 67 theses, like all his writings, are prevailingly polemical. Attempts have however been made to elaborate and systematize his divinity from his works. See Dr. Eduard Zeller, *Das theologische System Zwingli's dargestellt* (Tübingen, 1853). A complete collection of Zwingli's writings has been published in 8 vols. (Zürich, 1828). There are numerous biographies of him, the latest of which is *Huldreich Zwingli's Leben und auserwehlte Schriften*, by N. Christoffel (Elberfeld, 1847), one of the series of the lives and writings of the fathers of the Reformed church.

ZWIRNER, Ernst Friedrich, a German architect, born at Jacobswald, Silesia, Feb. 28, 1802, died in Cologne, Sept. 22, 1861. He was a pupil of the school of architecture at Breslau, and afterward attended the course of lectures at the royal academy of architecture and at the university of Berlin. He continued there 4 years, was enrolled among the auxiliary members of the superior administration of architecture in 1828, and executed several important works, mostly after the plans of Schinkel. In 1833 he was appointed architect of the cathedral of Cologne, and from the time of his appointment resolved to attempt its completion. The cathedral had been commenced 600 years before, but while it had occasionally made some progress, there was so much yet to be done, and at a cost so enormous, that its completion during the lifetime of the present generation was generally deemed impossible. Zwirner drew his plans, made the necessary estimates, and then appealed to Germany for assistance. The means were provided. Frederic William IV. of Prussia contributed annually the sum of $37,520, and in 1854 set with solemn services the key stone on the arch of the north entrance. The cathedral as advanced toward completion by Zwirner is considered the finest representative in Europe of the Gothic cathedrals of the middle ages. He designed and in several cases superintended the erection of numerous churches and castles along the banks of the Rhine. At the time of his death he was president of the council of architecture of the province of Cologne, and a privy councillor of the Prussian government.

THE END.

NEW
AMERICAN CYCLOPÆDIA.

SUPPLEMENT:

CONTAINING NEW AND OMITTED TITLES.

THE
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CONTAINING NEW AND OMITTED TITLES.

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ABERCROMBIE, John Joseph, brigadier-general of volunteers in the U. S. army, born in Baltimore, Md., in 1802. His father, cousin of the British general Sir Ralph Abercromby, emigrated to this country from Scotland, served as a volunteer during the revolutionary war, and settled in Tennessee. The son was graduated at West Point in 1822, became 2d lieutenant in the 1st infantry, was promoted to be 1st lieutenant in 1828 and captain in 1836, and received the brevets of major in 1844 "for gallant and meritorious service in Florida," to rank from Dec. 25, 1837, and of lieutenant-colonel in 1847 "for gallant and meritorious service in the several conflicts of Monterey," on the first day of which, Sept. 23, 1846, he was wounded. He was appointed lieutenant-colonel of the 2d infantry in 1852, and colonel of the 7th Feb. 25, 1861. In May, 1861, he was assigned a brigade under Gen. Patterson, commanding the department of Pennsylvania. He was appointed brigadier-general of volunteers Aug. 31, 1861, and distinguished himself at the battle of Fair Oaks, May 31 and June 1, 1862, where he was wounded.

AKERS, Benjamin Paul, an American sculptor, born in Saccarappa, near Portland, Me., July 10, 1825, died in Philadelphia, May 21, 1862. At the age of 18 he went to Portland in search of employment. After being employed for some time as a compositor in a printing office, he was induced, by the sight of Chantrey's statue of Washington in the state house at Boston, to study sculpture. In 1849 he opened a studio in Portland, and during the next two years modelled busts of Henry W. Longfellow, Samuel Appleton of Boston, C. S. Daveis, and others. In 1851–'2 he visited Italy, and upon returning to Portland modelled a statue of "Benjamin in Egypt," which was exhibited at the New York crystal palace in 1853. During a subsequent visit to Washington he found much employment among public men, numbering among his sitters Judge McLean, Edward Everett, Gerrit Smith, and Gen. Houston. In Jan. 1855, he sailed again for Europe, and during a residence of 3 years in Rome produced a number of portrait busts and statues and ideal compositions, comprising his most characteristic works. In the latter class may be mentioned a model of "Una and the Lion," a statue of St. Elizabeth of Hungary (of which 3 repetitions in marble were executed), the "Dead Pearl Diver," exhibited in the United States, and an ideal head of Milton, his last and by many considered his best production in Rome. The last two works are elaborately described in Hawthorne's novel, "The Marble Faun." He returned to America in impaired health, and in 1859 revisited Rome, where he made a small clay model of a statue of Commodore Matthew C. Perry for the central park, New York. Upon returning to America in 1860, he established himself first in Portland and subsequently in Philadelphia, but owing to rapidly declining health was unable to devote much time to the practice of his art. He died of consumption. His original works include about 40 portrait busts and statues, remarkable for the fidelity of their likenesses; and he also executed some marble copies from the antique.

ALPES-MARITIMES, a department in the S. E. of France, formed from the *circondario* of Nice, ceded to France by Sardinia in 1860, and the arrondissement of Grasse, formerly belonging to the department of Var; area, 1,620 sq. m.; pop. in 1862, 194,578. It lies between the Mediterranean and the mountains from which it takes its name, and is watered by the Var, Paillon, Bévère, Roja, Vésube, Esteron, and Tinea. The surface is mountainous and crossed by numerous valleys. The climate is the finest in France. The country near the coast is well cultivated, and elsewhere there are valuable forests and various mineral productions. The principal towns are Nice, Villafranca, Grasse, and Cannes.

ALVORD, **Benjamin**, brigadier-general of volunteers in the U. S. army, born in Rutland, Vt., Aug. 18, 1813. He was graduated at West Point in 1833, and assigned to the 4th regiment of infantry. In 1835 he was appointed assistant commissary of subsistence, and in 1836 was promoted to be 1st lieutenant. He was assistant professor of mathematics at the military academy the next year, but soon exchanged that office for an assistant professorship of natural and experimental philosophy, which he retained until 1839. During the Mexican war he won promotion to be captain and brevet major by his gallantry at Palo Alto, Resaca de la Palma, and several other engagements. In 1854 he was appointed paymaster with the rank of major, and on April 15, 1862, was commissioned brigadier-general of volunteers, and placed in command of the district of Oregon, where he is still stationed.

AMMEN, **Jacob**, brigadier-general of volunteers in the U. S. army, born in Virginia. He was graduated at West Point in 1831, and assigned to the 1st artillery. From 1831 to 1832, and from 1834 to 1836, he was acting assistant professor of mathematics in the military academy, in 1832 assistant instructor of infantry tactics, and in 1837 assistant professor of natural and experimental philosophy. He was promoted to be 1st lieutenant in 1836, resigned his commission in Nov. 1837, and was then professor of mathematics successively in Bacon college, Georgetown, Ky., Jefferson college, Miss., the university of Indiana, and Jefferson college again. In 1861 he became colonel of the 24th Ohio volunteers, and on July 16, 1862, was promoted to be brigadier-general of volunteers.

ANDERSON, **George B.**, a general in the service of the confederate states, born in Wilmington, N. C., about 1834, died in Raleigh, N. C., Oct. 16, 1862. He was graduated at West Point in 1852 and appointed a brevet 2d lieutenant in the 2d dragoons, and became a 1st lieutenant in Dec. 1855, and adjutant of his regiment in Aug. 1858. He resigned his commission April 25, 1861, and took up arms against the United States. Appointed a brigadier-general in the provisional confederate army, he commanded the North Carolina coast defences in Nov. 1861, and led a brigade at the battle of Antietam, where he received a wound in the foot which ultimately caused his death.

ANDERSON, **Richard Henry**, a general in the service of the confederate states, born in South Carolina about 1822, was graduated at West Point in 1842 and appointed a 2d lieutenant in the 1st dragoons; was transferred to the 2d dragoons in July, 1844; was brevetted a 1st lieutenant for gallantry at San Augustin, Mexico, Aug. 20, 1847; became a 1st lieutenant in July, 1848, and a captain in March, 1855. He resigned his commission March 3, 1861, and was appointed a colonel in the service of South Carolina; took command at Charleston, May 25; was made a brigadier-general in the provisional confederate army, after an attack on Santa Rosa island, opposite Pensacola, Oct. 9; and in Sept. 1862, was promoted to be a major-general. He commanded the 5th division of the army which invaded Tennessee under Gen. Bragg in 1862.

ANDERSON, **Robert**, a brigadier-general in the U. S. army, born at "Soldiers' Retreat," near Louisville, Ky., June 14, 1805. His father was a colonel of the revolutionary army, and his mother a cousin of Chief Justice Marshall. He was graduated at West Point in 1825 and brevetted a 2d lieutenant in the 2d artillery, and soon after promoted to be a 2d lieutenant in the 3d artillery. During the "Black Hawk war" of 1832 he acted as assistant inspector-general of Illinois volunteers, and in 1833 he was promoted to a 1st lieutenancy. In 1835–'7 he was instructor of artillery at West Point, on April 2, 1838, was brevetted a captain for "gallantry and successful conduct in the war against the Florida Indians," and in May became a member of the military family of Gen. Scott. He served on the staff as assistant adjutant-general, with the brevet rank of captain, until the latter part of 1841, when he resigned his staff appointment on his promotion to a captaincy. He accompanied Gen. Scott to Mexico in 1847, participated in the reduction of Vera Cruz, and was brevetted major Sept. 8, for "gallant and meritorious conduct" in the battle of Molino del Rey, where, though severely wounded early in the day, he headed the small force which first entered the Molino, and kept the field until the capture of the enemy's works. In 1853–'4 he was governor of the branch military asylum at Harrodsburg, Ky., an institution of which he was the founder. He was promoted to be a major in the 1st artillery in 1857. In 1860 he was a member of the mixed commission appointed in compliance with a resolution of congress to examine into the organization, &c., of the military academy at West Point. In the autumn of that year he was assigned to duty in Charleston harbor, S. C., where he assumed command Nov. 20. On the night of Dec. 26, 1860, feeling assured that the authorities of the state of South Carolina, which had recently passed an ordinance of secession, would attempt to take possession of Fort Moultrie, he removed his small garrison to the less exposed position of Fort Sumter, about 2 miles distant, where during the next 3½ months he was closely besieged by the army of the seceded states. On Jan. 11 he refused to treat with the commissioners sent by the governor of South Carolina "to induce the delivery of Fort Sumter to the constituted authorities of that state;" and on April 11 he refused a demand to evacuate upon the terms proposed by Gen. Beauregard, the same which were granted to him on the afternoon of the 13th after a bombardment of nearly 36 hours, during which none of his command was seriously injured by the fire of the enemy. (See Sumter, Fort.) He marched out with his little band of 70 men from the burned and dilapidated fort with the honors of war on the 14th inst., and sailed the next day for New York, where he was most enthusiastically received, the city authorities marking their appreciation of his services by conferring upon him the freedom of the city. In May, 1861, he was appointed brigadier-general in the U. S. army, and against the remonstrances of his medical advisers entered upon his arduous duties as commander of the department of the Cumberland, to which he had been assigned. In consequence, however, of his failing health, he was soon compelled to be relieved, and has not since participated in active military duties. He has translated and adapted from the French "Instructions for Field Artillery, Horse and Foot, arranged for the Service of the U. S. Army," and "Evolutions of Field Batteries of Artillery," now used by the U. S. war department.

ANDREW, James Osgood, D.D., bishop of the Methodist Episcopal church, South, born in Georgia in 1794. He entered the South Carolina conference in 1813. Having married a lady who owned slaves, he became on that account unacceptable as general superintendent to the conferences of the North, and at the general conference held at New York in 1844 a resolution was adopted after a long debate requesting him to desist from the exercise of his episcopal functions until he should cease to be a slaveholder. The representatives of 13 southern conferences immediately presented a protest against this action, and declared their conviction that the further exercise of jurisdiction over them by the general conference would be prejudicial to the interests of the church in the southern states. This led to the separation of the Methodist Episcopal church into two independent bodies. (See Methodist Episcopal Church, South.)

ANDREW, John Albion, 21st governor of Massachusetts since the adoption of the constitution of 1780, born in Windham, Me., May 31, 1818. He was graduated at Bowdoin college, Me., in 1837, and immediately afterward commenced the study of law in Boston, where in 1840 he was admitted to the bar. During the next 20 years he practised his profession in that city, his most conspicuous efforts being called forth by causes arising under the fugitive slave law of 1850; and in 1858, having during the previous 10 years been closely identified with the anti-slavery party of Massachusetts, he was elected a member of the state legislature from Boston. In 1860 he was a member of the republican convention which nominated Mr. Lincoln for the presidency, and in the same year was elected governor of Massachusetts by the largest popular vote ever cast for any candidate. Anticipating the conflict between the government and the seceded states, he early took measures to place the militia of Massachusetts on a footing of efficiency, and within a week after the president's proclamation of April 15, 1861, despatched 5 regiments of infantry, a battalion of riflemen, and a battery of artillery to the assistance of the government. He subsequently took an active part in raising and equipping the Massachusetts contingent of 3 years' volunteers. He was reelected governor of Massachusetts in 1861, and has made frequent visits to Washington and other places to confer with persons in the public employ on national affairs. He took part in the conference held by the governors of the loyal states at Altoona, Penn., in Sept. 1862, and prepared the address which they subsequently presented to the president. In November following he was for the 3d time elected to the office of governor by 25,000 majority over his opponent, Gen. Devens, the candidate of the conservative party.

ANTIETAM CREEK, a deep and narrow stream in Maryland, which flows into the Potomac about 6 m. above Harper's Ferry, and gives the name to a bloody battle fought near Sharpsburg, Md., between the U. S. troops commanded by Gen. McClellan and the confederates under Gen. Robert E. Lee, Sept. 17, 1862. On Sept. 4, 5, and 6 the confederate forces, about 100,000 strong, and comprising the corps of Gens. Jackson, Longstreet, A. P. and D. H. Hill, under the command in chief of Gen. Lee, entered Maryland by the lower fords of the upper Potomac, near Leesburg, and immediately occupied Frederic and the adjoining country along the Monocacy river, on which their right rested. On the 8th the U. S. troops under McClellan occupied Rockville, in Montgomery co., and by the 11th had interposed themselves in force between the rear of the enemy and the fords of the Potomac; perceiving which, Lee evacuated Frederic on the 12th and marched upon Hagerstown, sending a corps under Jackson to capture Harper's Ferry, and reconnoitring parties toward Pennsylvania and in the direction of Baltimore, for the purpose of covering his movement toward the upper fords of the Potomac, by which, if hard pressed, he could retreat into Virginia. The national forces followed rapidly, and on the morning of Sunday, the 14th, the advance, under Gens. Burnside, Hooker, and Reno, encountered the enemy strongly posted on the crest of South mountain, a ridge of the Alleghanies crossing the Potomac at Harper's Ferry, and in a position commanding Turner's gap, through which passes the turnpike road to Hagerstown. After a determined resistance the confederates were driven from the heights with severe loss, and at nightfall the crest commanding the Hagerstown road was completely in the possession of the Union forces, whose loss in killed, wounded, and missing amounted to 2,325, Gen. Reno being among the killed. A simultaneous movement by Gen. Franklin upon Crampton's gap on the extreme left was equally successful, and the confederates, forced from all their positions, retreated during the 15th and 16th behind Antietam creek to the neighborhood of Sharpsburg. On the evening of Tuesday, the 16th, the combined Union forces under the command of McClellan appeared in front of the confederate position, a rugged and wooded plateau of some extent, descending to the banks of the Antietam, which is here a deep stream, fordable in few places, and crossed by 3 bridges. Gen. Hooker was at once directed to lead his corps across the bridge on the right, and make a demonstration against the enemy's left wing. His passage was undisputed, but heavy skirmishing occurred before he had secured a favorable position, and at nightfall the hostile armies bivouacked within musket shot of each other. The plan of battle adopted by McClellan was for Hooker, supported by Sumner, Franklin, and Mansfield, to force the confederate left, while Burnside simultaneously crossed the lowest of the 3 bridges and attacked their right. The commander-in-chief himself occupied a ridge in the centre, on the left bank of the Antietam, where the troops of Porter and Sykes were stationed as a reserve. At dawn of the 17th a portion of Hooker's troops became engaged with the enemy, and within half an hour a general battle raged along the whole of that part of the field. Soon afterward the enemy's line began to waver and finally retreated up a sloping field of ploughed land, enclosed by woods, and entered by a corn field in the rear on the crest of the hill. The Union forces, pressing on with ardor, drove the confederates over the hill and through the corn field into the woods beyond. Here, however, the former were met by a fresh force, and pushed back in confusion over half the ground they had won. Hooker, finding his centre in danger of being pierced, sent for a brigade from Gen. Doubleday, who held a strong position on a hill to the right. The troops marched steadily up the ploughed field, and reaching the crest of the hill maintained their position for half an hour with a stubborn tenacity which effectually checked the advance of the confederates, who were finally compelled to take refuge again in the woods, leaving the corn field for the second time in the hands of the Union forces, whose loss had been very severe. On Hooker's left Gen. Ricketts, aided by a body of troops under Gen. Mansfield, which had just come up, made a bold but ineffectual attempt to advance. The enemy, under shelter of the woods, poured in so destructive a fire that the national forces were compelled to fall back, Mansfield himself being killed while endeavoring to rally his troops. But as Ricketts assured Hooker of his ability to hold his position, the latter determined to advance his centre again, and two fresh brigades of Mansfield's troops under Crawford and Gordon were ordered to occupy a piece of woods to the right of the corn field, which was considered the key of the position. Riding in front of the troops to reconnoitre, Hooker was struck in the foot by a bullet, and soon after carried from the field. At this moment Sumner's corps came up, and Sedgwick's division was ordered to support Crawford and Gordon, while the divisions of Richardson and French were advanced to the left. Large confederate reënforcements had meanwhile reached the field, and Sedgwick, while advancing across the corn field in line of battle, was assailed on his left by a terrible fire of musketry, under which that part of his line was thrown into confusion. Crawford was at the same time driven out of the woods, and his troops, falling back upon and breaking through Sedgwick's front line, threw the whole division into disorder. Gen. Sumner and other officers labored strenuously to reform the men, but so severe was the fire of the enemy that the division was obliged to be withdrawn to the ground where Hooker had bivouacked on the preceding night, leaving the corn field once more in the possession of the confederates. It was now 1 o'clock in the afternoon, and though the Union wings held their ground successfully, the centre was for the present too much disorganized to resume the offensive, if indeed able to maintain its position. On the other hand, the confederates, through exhaustion or lack of ammunition, neglected to pursue their advantage. At this crisis Franklin arrived upon the field with fresh troops, and while one of his divisions under Slocum was sent forward on the left to the support of French and Richardson, another under Smith advanced at a run over the corn field, and attacked the enemy with such impetuosity that within 10 minutes this hotly contested ground and the adjoining woods were again in the possession of the Union troops. The confederates made no further attempt to dislodge them, and in this part of the field the battle was practically ended, although the artillery on both sides maintained a fire for some time, the advantage, after various mutations of fortune, remaining with the Union troops, who had gained a mile of ground since morning. Franklin, however, was unable to advance further from the want of an efficient reserve, Sumner's corps being still too much demoralized to act in that capacity. Meanwhile Burnside had been engaged on the extreme left of the Union position in several attempts to cross the lower bridge, a stone structure strongly defended by artillery and infantry. After two unsuccessful attacks he led the assault in person, and between 2 and 3 o'clock in the afternoon the confederates were driven back to a range of hills in the rear, whence their batteries played with considerable effect upon the Unionists. At 4 o'clock orders came from McClellan to Burnside to carry these batteries at all hazards. That on the nearest hill was speedily taken; but the new position was commanded by a higher eminence beyond, and already large masses of the enemy were seen approaching on the left to recover the lost ground. Burnside held the hill until, through fear of being flanked, he was compelled to retire toward the bridge. So critical seemed his position at this moment, in the presence of a greatly superior force, that he sent an urgent message to McClellan for reënforcements, declaring that without them he could not hold his ground half an hour. Not deeming it prudent to engage the reserves under Fitz John Porter, McClellan gave the reply that no troops could be spared, and that Burnside must hold his position at any cost, or at all events the bridge, as the safety of the army depended upon maintaining that point. The enemy, however, refrained from attempting a further advance, and the approach of night soon put an end to the conflict at all points of the field. Early on the succeeding day the confederates sent in a flag of truce asking permission to bury their dead who had fallen between the lines of the two armies, which was granted; but they jealously repelled any attempt to penetrate their own lines. Under cover of this operation they fell quietly back on the night of the 18th to the Potomac, which they crossed without serious opposition just two weeks from the day they had entered Maryland. Their forces had been greatly strengthened in the battle of the 17th by the arrival of Jackson's corps, which, after compelling the surrender of Harper's Ferry on the morning of the 15th, had successfully formed a junction with Lee. The loss of Harper's Ferry, by releasing this corps, consequently converted what might have become a serious defeat, if not a complete rout, of the confederates into an indecisive victory for the Union forces. The loss of the latter in the battle of Antietam was, according to the official report of Gen. McClellan, 2,010 killed, 9,416 wounded, and 1,043 missing; and their total loss in the battles of the 14th and 17th amounted to 14,794. Of the confederate killed, about 3,000 were buried by the Unionists, and their total loss in the two battles is estimated by Gen. McClellan at 4,000 killed, 18,742 wounded, and 5,000 prisoners, beside stragglers sufficient to make the number amount to 30,000. The report adds: "From the time our troops first encountered the enemy in Maryland until he was driven back into Virginia, we captured 13 guns, 7 caissons, 9 limbers, 2 field forges, 2 caisson bodies, 39 colors, and 1 signal flag. We have not lost a single gun or a color." Upward of 15,000 small arms were also collected on the field, beside many carried away by citizens, and distributed among the newly raised troops, a number of regiments of which participated with credit in the campaign. The number of troops on each side was probably not far from 100,000.

APPLETON, Nathan, an American merchant, born in New Ipswich, N. H., Oct. 6, 1779, died in Boston, July 14, 1861. He received a good school education, and at the age of 15 entered the freshman class of Dartmouth college. He however soon relinquished his studies to engage in business with his brother Samuel in Boston, with whom he remained until 1809. In 1813 he was associated with Francis C. Lowell and Patrick T. Jackson in establishing at Waltham near Boston a cotton mill, in which was set up the first power loom ever used in the United States; and in 1821 he became one of the founders of the Merrimac manufacturing company, from which originated the city of Lowell. Thenceforth he was a steady advocate of the manufacturing interest, and, in consequence, of the protective system under which it acquired its present development. In 1815 he entered public life as a member of the Massachusetts legislature from Boston, and was several times reëlected in a similar capacity. In 1830 he was chosen a representative in the 22d congress from the same city after an exciting contest, and during the first session opposed the report of the committee of ways and means on the tariff, prepared by Mr. McDuffie of South Carolina, in a speech characterized by Mr. Webster as "a model of close reasoning on an abstruse subject." In 1842 he was again elected to congress, and lent his aid in securing the passage of the protective tariff bill prepared in that year; but after the close of a single session he resigned his seat, and did not subsequently take an active part in public affairs. On banking and other subjects connected with the science of political economy he wrote with force and perspicuity, and had a peculiar faculty of presenting a financial or commercial question in a form intelligible to the common mind. In this respect his little treatise entitled "Remarks on Currency and Banking," of which an enlarged edition was published in 1857, occupies a high position among works of its class, and has been pronounced "almost worthy of being studied in the schools as an elementary manual." He also published an account of the introduction of the power loom and origin of Lowell. He accumulated a large estate by his efforts in domestic manufactures, toward the establishment of which in New England he powerfully contributed, and to the close of his life was noted for his integrity and active philanthropy. A memoir of him, read before the Massachusetts historical society by R. C. Winthrop, was published in Boston in 1861.

ARMISTEAD, Lewis A., a general in the service of the confederate states, born in Virginia, entered the U. S. military academy in 1834, remained there about 2½ years, was appointed 2d lieutenant in the 6th infantry in 1839 and 1st lieutenant in 1844, and won the brevets of captain and major for gallant conduct at Contreras and Churubusco, and at Molino del Rey. He was one of the storming party at the battle of Chapultepec, where he was highly distinguished and was wounded. In 1855 he was promoted to be captain. Resigning his commission in 1861, he was appointed a brigadier-general in the confederate army. He took part in the invasion of Maryland by Gen. Lee, and was wounded in the foot at the battle of Antietam.

ARMSTRONG, Sir William George, an English engineer and inventor, born in Newcastle-upon-Tyne, Nov. 26, 1810. His father was an alderman of that city, and intended the son for the legal profession; but his inclination to mechanical pursuits was so strong that he soon abandoned his law studies. He gained a considerable reputation by the invention of improved hydraulic machinery, and its application to lifting-cranes and other purposes, and after a time became a partner in the Elswick works near his native town. A hydro-electric machine was his next invention. In 1846 his attention was turned to the subject of rifled ordnance, and in 1854 he presented to the duke of Newcastle, then at the head of the war office, his plans for rifled breech-loading cannon. In 1858 these guns were introduced into the artillery service of the British army, and though there have been some complaints in regard to the projectile thrown by them, and the liability of the guns themselves to get out of order, they have attained a high reputation. (See Rifle.) He was knighted in 1859. The construction of iron-clad ships of war led him to make in 1861–'2 numerous experiments on the penetrability of iron plates; in the course of these he came to the conclusion that shot fired at moderate distances, from muzzle-loading, smooth-bored cannon of large caliber, possess greater power of penetrating and crushing iron plates than the projectiles of the breech-loading rifled ordnance. This result has excited much comment from eminent artillery officers in England and elsewhere. Sir William Armstrong has been since 1858 engineer of the war department, and superintendent of the manufacture of cannon at the government foundery at Woolwich, and also manufactures a large number at his own works at Elswick. He is a fellow of the royal society, and a member of the council of the institute of civil engineers in London.

ARNOLD, Lewis G., brigadier-general of volunteers in the U. S. army, born in New Jersey. He was graduated at West Point in 1837, and appointed 2d lieutenant in the 1st artillery. He was promoted to be 1st lieutenant in 1838, and won two brevets in Mexico by his gallantry at Contreras and Churubusco, where he commanded his company, and at Chapultepec. He afterward achieved distinction in Florida, commanding a detachment in a conflict with a large force of Seminoles at Big Cypress, April 7, 1856. In May, 1861, he was commissioned major in the 1st artillery, and on Jan. 24, 1862, brigadier-general of volunteers. He is now (Oct. 1862) with Gen. Butler's army at New Orleans.

ASBÓTH, Alexander (Sándor), brigadier-general of volunteers in the U. S. army, born in Keszthely, in the county of Zala, Hungary, Dec. 18, 1811. He studied at Oedenburg, served for some time in an Austrian cuirassier regiment, subsequently went through a course of legal studies at Presburg, after the termination of which he devoted himself to engineering, and was employed in the execution of various important hydraulic works in the Banat. He early attached himself to the liberal opposition party in his country, and on the outbreak of the war of 1848–'9 entered the Hungarian army, took part in the battles of Tomasovácz, Kâpolna, and Nagy Sarló (having in the night preceding the signal victory at the latter place constructed at a few hours' notice the bridge across the Gran on which Görgey's army crossed that river), and at the close of the struggle was adjutant-general of the army at the seat of the government. He accompanied Kossuth to Turkey, shared his confinement at Kutaieh, and on his and his companions' release in the autumn of 1851 came on board the frigate Mississippi to the United States, of which in due time he became a citizen. Having here alternately pursued the occupations of farmer, engineer, and manufacturer of galvano-plastic and electro-metallic articles, he on the outbreak of the civil war in the spring of 1861 offered his services to the government, and in July went with Major-Gen. Fremont, as chief of his staff, to Missouri. By general order of Sept. 26 he was appointed brigadier-general, and in Fremont's western campaign commanded the 4th division. Under Gen. Hunter he with Gen. Sigel advanced from Springfield, and then with his division formed the rear guard on the retreat to Rolla. He soon after took an active part in Gen. Curtis's winter campaign in Arkansas, occupied Bentonville and Fayetteville, and was prominent in the 3 days' battle of Pea Ridge, in which he was severely wounded. He was subsequently transferred to the army of the Mississippi, then advancing against Corinth, and in Oct. 1862, was detailed to the command of Gen. Wright in the department of the Ohio.

ASHBY, Turner, a brigadier-general in the service of the confederate states, born at Rose Hill, Fauquier co., Va., about 1824, killed near Harrisonburg, Va., June 6, 1862. He was educated at home, engaged for a time in mercantile pursuits at Markham, Va., and afterward occupied himself successively in farming and politics. When the civil war broke out he raised a regiment of cavalry, and being a dashing and accomplished horseman soon became one of the most celebrated officers of that arm in either the national or confederate service. He was with Gen. T. J. Jackson, covering the retreat of his army before the advance of Gen. Banks, and subsequently of Gen. Fremont up the Shenandoah valley, and daily skirmishing with the Union vanguard. In May, 1862, he was appointed brigadier-general in the confederate provisional army. He fell in one of the lesser engagements which preceded the battle of Cross Keys.

ATKINSON, Thomas Witlam, an English artist and traveller, born in Yorkshire, March 6, 1799, died at Lower Walmer, Kent, Aug. 13, 1861. He served an apprenticeship to an architect, and gained distinction by his architectural designs, but afterward devoted himself with great success to landscape painting. In 1846 he went to Russia, and, having secured the approval of the czar and the acquaintance and protection of government officials, he set out on a journey among the wandering tribes of Siberia and the Chinese dependencies. In these wild regions he spent 7 years, exploring alone districts never before visited by a European, acquiring an intimate knowledge of the country and the people, meeting with many adventures and narrow escapes, and making an immense number of water-color sketches. He returned to England in 1854, and in 1858 published "Oriental and Western Siberia, a Narrative of Seven Years' Explorations and Adventures in Siberia, Mongolia, the Kirghis Steppes, Chinese Tartary, and part of Central Asia," and in 1860 "Travels in the Regions of the Upper and Lower Amoor," both profusely illustrated from his own designs.

AUGUR, Christopher Colon, major-general of volunteers in the U. S. army, born in New York. He was appointed to the U. S. military academy from Michigan, was graduated in 1843, and in 1847 became 1st lieutenant in the 4th infantry. During the Mexican war he was aide-de-camp to Brig. Gen. Hopping (1847), and after the death of that officer received a similar appointment on the staff of Brig. Gen. Caleb Cushing (1848). He was promoted to be captain in 1852, and having been ordered to the West was distinguished in several conflicts with the Indians in Oregon in 1856. In May, 1861, he was appointed major in the 13th infantry, and returning to the East was for a short time commandant of cadets at West Point. On Nov. 12 he was commissioned brigadier-general of volunteers. He was first assigned a command in Gen. McDowell's corps, and in July, 1862, was appointed to a division in the army corps of Gen. Banks. He was wounded at the battle of Cedar mountain, Aug. 9, 1862. In October he was a member of the court of inquiry assembled under the presidency of Gen. Hunter to investigate the circumstances of the surrender of Harper's Ferry and other matters; and at the close of the investigation in November he was ordered to report to Gen. Banks for service in the southern expedition then fitting out under his orders. He was promoted to be major-general Nov. 15.

AVERELL, William W., brigadier-general of volunteers in the U. S. army, born in the state of New York, was graduated at West Point in 1855, and appointed brevet 2d lieutenant of mounted rifles (now the 3d cavalry). Being ordered to New Mexico, he distinguished himself by surprising and capturing a party of Kioway Indians in Dec. 1857, and was engaged with great credit in several conflicts with the Navajoes in the following autumn. He was promoted to be 1st lieutenant in May, 1861, and received leave of absence in order to take command of the 3d Pennsylvania volunteer cavalry. In the autumn of 1862 he was promoted to be captain in the 3d (regular) cavalry, and brigadier-general of volunteers, and with a brigade composed mainly of cavalry reënforced Gen. Pleasonton in the advance of the army into Virginia after the battle of Antietam.

B

BABCOCK, Rufus, D.D., an American clergyman, born in North Colebrook, Conn., Sept. 18, 1798. He was graduated at Brown university in 1821, was for two years tutor in Columbian college, D. C., was ordained pastor of the Baptist church at Poughkeepsie, N. Y., in 1823, and in 1826 became pastor of the first Baptist church in Salem, Mass. In 1833 he was elected president of Waterville college, Me., and in 1836, his health failing, he resigned, and accepted the pastorate of the Spruce street Baptist church, Philadelphia, where he remained 3½ years. He then returned to his former church in Poughkeepsie. He was twice secretary of the American and foreign Bible society, and has also been secretary of the American Sunday school union and the Pennsylvania colonization society, and is now pastor of a Baptist church in Paterson, N. J. He founded and for 5 years edited the "Baptist Memorial," and has published "Claims of Education Societies on the Young Men of our Country" (Boston, 1829); "Review of Beckwith's Dissuasive from Controversy on Baptism" (1829); "Making Light of Christ" (1830); "Memoir of Andrew Fuller" (1830); "Memoir of Rev. George Leonard" (1832); "History of Waterville College" (1836); "Tales of Truth for the Young" (1837); memoirs of the life and writings of Abraham Booth and Isaac Backus, prefixed to an edition of their works (1839); "Personal Recollections of Rev. John M. Peck, D.D." (1858); "The Emigrant's Mother" (1859); and "A Memoir of the Life and Writings of Rev. John M. Peck, D.D." (1862).

BAILEY, Theodorus, an officer of the U. S. navy, born in the city of New York in 1803. He entered the navy as midshipman in 1818, and was promoted to be lieutenant in 1827. From 1838 to 1841 he was stationed at the Brooklyn navy yard, then cruised in the East Indies, was promoted to be commander in 1849 and captain in 1855, and in the latter part of 1861 was ordered to the steam frigate Colorado, then on the blockade off Pensacola. He remained here long enough to participate in the bombardment of the enemy's works near Pensacola, and was then sent to the passes of the Mississippi. In the capture of the Mississippi forts by the squadron of Flag Officer Farragut (April, 1862), he commanded the second division of the attacking force; afterward came home as bearer of despatches, and was appointed commander of the Sackett's Harbor navy yard. On the reorganization of the navy in the summer of that year he was promoted to be commodore, and on Nov. 4 succeeded acting Rear Admiral Lardner in command of the eastern gulf blockading squadron.

BAIRD, Absalom, brigadier-general of volunteers in the U. S. army, born in Washington, Penn., Aug. 20, 1824. He was graduated at Washington college in 1841, and after studying law several years, entered the military academy at West Point in 1845. Upon completing the course in 1849, he was brevetted a 2d lieutenant in the 2d artillery, and for several years was stationed at different posts on the Atlantic seaboard. Between 1853 and 1859 he held the post of assistant instructor and subsequently of assistant professor of mathematics at West Point. In March, 1861, he was ordered to Washington to take command of Magruder's battery of light artillery, and in the succeeding May he was appointed to fill a vacancy in the adjutant-general's office, with the rank of captain. He accompanied the army on its march upon Manassas in July as chief of staff to Gen. Tyler, and participated in the battle of Bull run. Subsequently he was appointed assistant inspector-general, with the rank of major, and in March, 1862, was assigned as chief of staff and inspector-general to the 4th army corps commanded by Gen. Keyes, in which capacity he was present at the siege of Yorktown and the battle of Williamsburg. In May he was commissioned a brigadier-general of volunteers, and placed in command of a brigade under Gen. Morgan at Cumberland Ford, Ky.

BAKER, Edward Dickinson, an American senator, born in London, Feb. 24, 1811, killed in the battle of Ball's bluff, Oct. 21, 1861. His family removed to the United States about 1815, and settled in Philadelphia, whence in 1825 they removed to Belleville, Ill., where his father established an academy. The son studied law in Greene co., Ill., was admitted to practice, removed to Springfield, and in 1837 was elected a member of the legislature, and in 1840 of the state senate, which office he filled till 1844, when he was chosen a representative in congress, and remained such till the breaking out of the Mexican war in 1846, when he became colonel of a regiment of Illinois volunteers, and resigned his seat. He shared in the siege of Vera Cruz, commanded with great gallantry a brigade at Cerro Gordo, and after the conclusion of the war removed to Galena, Ill., and took a prominent part in bringing Gen. Taylor before the country as a candidate for the presidency. In 1848 he was again elected to congress, but, becoming connected with the Panama railroad company, declined a reëlection, and in 1852 settled in California, practising law with success, and connecting himself with the republican party in politics, whose candidate for congress he was in 1858, but was defeated. When Senator Broderick was killed in a duel in 1859, Col. Baker, who had been his warm personal friend, delivered a funeral oration over his body in the public square at San Francisco, and soon afterward removed to Oregon, where in 1860, by a coalition between the republicans and Douglas democrats in the legislature, he was elected to the U. S. senate, and took his seat in the last session of the congress which ended with the administration of Mr. Buchanan. On the breaking out of the civil war in 1861, he raised a regiment in New York and Philadelphia, and, declining to be appointed a general, went into the field at its head. At the battle of Ball's bluff he commanded a brigade, and fell in advance of the line as he was quietly and coolly giving directions to his men. He was a gifted orator, and possessed the most genial and manly qualities.

BALL'S BLUFF, Battle of, an engagement fought Oct. 21, 1861, on the Virginia side of the Potomac near Harrison's island, and about 2 m. S. of Conrad's ferry, between a U. S. force under Col. E. D. Baker and a superior confederate force led by Gen. Evans. On the day previous Gen. Stone, commanding the army of observation on the Maryland side of the Potomac, ordered Col. Devens of the 15th Massachusetts to make a reconnoissance in force toward Leesburg. Col. Devens crossed above Edwards's ferry, and Col. E. D. Baker was directed to hold himself in readiness to cross if the reconnoitring force was attacked, and in such case to take command of all the troops on the Virginia side. The troops under him consisted of a part of the 15th and 20th Massachusetts regiments, the New York Tammany regiment, and a part of his own so called California regiment (chiefly of Pennsylvania volunteers), together with the 1st U. S. artillery and the Rhode Island battery, in all about 2,000, with 5 cannon. Col. Devens, having met the enemy in superior force, had retired to the heights above the bluff, and on the morning of the 21st formed his men in a natural opening or clearing, so that they had before them and on both flanks a growth of young trees. The confederate troops were posted beyond the wood, and commenced firing early in the day. Col. Baker's force began the work of crossing at 7 A. M., but finding no means of transportation save two scows, one holding 40, the other 60 men, the last of the troops were not landed until about 4 P. M. During the entire day, but especially after 10 A. M., fighting had been going on, the confederates being meantime reënforced until they numbered about 5,000 men. Col. Baker quickly got 4 pieces of artillery into position, and formed his troops, the California battalion being on the left, the Tammany and Massachusetts 15th on the right, and the Massachusetts 20th near the centre. Skirmishing companies were sent out on the right; but as these advanced the enemy rose from their concealment in the edge of the woods, firing a volley into the Union troops, and repeating this at intervals of a few minutes for half an hour. The confederates were without artillery or cavalry, but they filled the woods, the engagement extending along the whole line; and while their fire was close and destructive, that of the U. S. troops against their sheltered foes was far less effective. About 6 o'clock the Union troops charged, Col. Baker at their head cheering them on. The confederates in return made a more vigorous onset, and one of them rode forward and discharged all the barrels of his revolver directly at Col. Baker, who fell, the line being at the same time driven back. A general and headlong retreat of the Union forces now began, those who could escape flinging away every incumbrance, and rushing or tumbling down the bank. The only boat at the shore being filled was sunk, and hundreds plunged into the river, many of whom were drowned. About 500 were taken prisoners on the heights, and many were shot while struggling in the water. The confederate loss has been stated at about 300 in killed and wounded. The Union loss, beside that in prisoners, was probably 200 killed, and about as many wounded.

BARLOW, Francis Channing, brigadier-general of volunteers in the U. S. army, born in Brooklyn, N. Y., Oct. 19, 1834. He was graduated at Harvard college in 1855, studied law, and commenced the practice of his profession in New York city; was for a time connected with the "Tribune" newspaper; and in April, 1861, took the field as a private in the 12th regiment New York state militia, in which he served 3 months, rising to the rank of 1st lieutenant. He was then commissioned lieutenant-colonel of the 61st New York volunteers, and during the siege of Yorktown became colonel. He distinguished himself at the battle of Fair Oaks, where he was acting brigadier during part of the action. In the retreat from the Chickahominy to James river his regiment, under Gen. Richardson, rendered the most important services. It returned to Washington with barely 100 men, and the New York 64th was added to Col. Barlow's command. At the battle of Antietam, Sept. 17, 1862, he captured 2 stands of colors and 300 prisoners, and was highly praised and recommended for promotion by Gen. Caldwell. He received two severe wounds, and was carried off the field for dead. Two days after the battle of Antietam, the president appointed him brigadier-general for distinguished conduct at the battle of Fair Oaks, June 1, 1862.

BARNARD, John G., brigadier-general of volunteers in the U. S. army, born in Essex co., Mass., May 19, 1815. He was graduated at West Point at the age of 18, obtaining a commission in the corps of engineers, and for the next 18 years was employed upon the sea coast defences, chiefly of the gulf. He was 10 years stationed at New Orleans, where he was associated with Beauregard, completed Fort Jackson, and repaired and enlarged Fort St. Philip. In 1838 he was promoted to be captain. During the Mexican war he fortified Tampico, and after the capture of the city of Mexico he was ordered to report to Gen. Scott. For his services in this campaign he was brevetted major in 1849. In 1850, '51, and '52 he was employed by a private company to survey the isthmus of Tehuantepec. The following year he was engaged on the Delaware breakwater and on the defences of the E. coast, and in 1854 on the fortifications of San Francisco harbor. In the spring of that year he became instructor of practical engineering at West Point, was superintendent of the military academy from March, 1855, till Sept. 1856, and from that time until April, 1861, had charge of the defences of New York. He was then intrusted with the fortifications of Washington, was on the staff of Gen. McDowell at the first battle of Bull run, and on the arrival of Gen. McClellan became chief of engineers in the army of the Potomac. He was commissioned brigadier-general of volunteers Sept. 23, 1861. Gen. Barnard has published a "Survey of the Isthmus of Tehuantepec" (1852); "Phenomena of the Gyroscope;" "Dangers and Defences of New York" (1859); "Notes on Sea Coast Defence;" and "The C. S. A. and the Battle of Bull Run" (8vo., New York, 1862); and has written much on mathematical and kindred subjects.

BARRON, Samuel, an officer of the navy of the confederate states, born in Virginia, entered the U. S. navy as midshipman in 1812, and in 1815 and during several subsequent years was stationed at the Brooklyn navy yard. He was attached to the Brandywine when she conveyed Gen. Lafayette to France in 1825; was promoted to be lieutenant in 1827 and commander in 1847; was ordered to the Norfolk navy yard in 1854; became captain in 1855; and in 1857 was appointed an inspector on the lighthouse board. He commanded the Wabash, the flag ship of Flag Officer Lavallette in the Mediterranean in 1859. At the outbreak of the civil war he was waiting orders. Resigning his commission, he was appointed a commodore in the navy of the confederate states, and placed in charge of the naval defences of North Carolina and Virginia, with the rank of flag officer. He was at Hatteras inlet at the time of the attack upon Forts Clark and Hatteras by Flag Officer Stringham and Gen. Butler, Aug. 27, 1861, and by request of the officers commanding the forts assumed the general direction of the defence. After the surrender he was brought to New York on the Minnesota, and remained a prisoner of war until exchanged in 1862.

BARRY, William Farquhar, brigadier-general of volunteers in the U. S. army, born in New York city, Aug. 18, 1818. He was graduated at the West Point military academy in 1838, and appointed brevet 2d lieutenant in the 4th artillery. Stationed on the northern frontier during the rebellion in Canada, he served part of the time on an armed steamer on the lakes, and part of the time as captain of a guard at Lewiston. He was appointed 2d lieutenant in the 2d artillery, July 7, 1838; in the same year assisted Maj. Ringgold in organizing the first battery of light artillery introduced into the U. S. army; in 1839 rendered a similar service with Col. Duncan; was ordered to Rhode Island during the Dorr rebellion; in 1842 was promoted to be 1st lieutenant; served in Mexico throughout the war, landing with the first troops at Tampico, and being appointed assistant adjutant-general of Patterson's division (1847), and aide-de-camp to Major-Gen. Worth (1848); was promoted to the rank of captain in 1852; and in that and the following year served in Florida against the Seminoles. From 1853 to 1856 he commanded the military post of Baton Rouge, La., and in 1857 served against the Sioux and Chippewas in Minnesota. During the troubles of 1858 he was employed in Kansas, and in 1859 he accompanied Gen. Harney toward Utah. In April, 1861, he reënforced Fort Pickens with a company of flying artillery, and the next month was appointed a major of the 5th (new) regiment of artillery. Ordered to Washington in July, he joined Gen. McDowell at Fairfax Court House, and participated in the battle of Bull run, after which he was ordered (July 23) to take charge of the field artillery of the army for the purpose of reorganization. On Aug. 20 he was appointed brigadier-general of volunteers, and assigned to duty on the staff of Major-Gen. McClellan, as chief of artillery of the army of the Potomac, in which capacity he shared in the various operations of the army at Yorktown and before Richmond.

BASCOM, Henry Bidleman, D.D., bishop of the Methodist Episcopal church, South, born in Hancock, Delaware co., N. Y., May 27, 1796, died Sept. 8, 1850. He entered the ministry in 1813, and after having filled several appointments in the Ohio, Tennessee, and Kentucky conferences, was through the influence of Henry Clay elected chaplain to congress. In 1827 he was elected president of Madison college, Uniontown, Penn., but resigned that office in 1829, and became agent of the American colonization society. In 1832 he was elected professor of moral science and belles-lettres in Augusta college, Ky., where he remained 10 years. The degree of D.D. was conferred upon him by the Wesleyan university, Middletown, Conn., in 1838. In 1839 he was elected to the presidency of Louisiana college, and about the same time the presidency of the Missouri university was tendered to him, both of which however he declined. Subsequently he became president of the Transylvania university, Ky. In the general conference of 1844, when the separation between the Methodist churches North and South occurred, he drew up the protest of the southern members against the action of the conference in the matter of slaveholding, and the next year was a member of the convention at Louisville by which the organization of the Methodist Episcopal church, South, was agreed upon, and was the author of the report which went forth from that body on that subject. In 1846 he was appointed editor of the "Southern Methodist Quarterly Review." He was also chairman of the board of commissioners of the Methodist Episcopal church, South, to settle the controversy between the northern and southern divisions of the church. In 1850 he was elected bishop. His published writings consist of a volume of sermons (1850), "Lectures on Infidelity," "Lectures and Essays on Moral Science," and sermons and sketches. His life has been written by the Rev. Dr. Henkle, and a collection of his "Posthumous Works" was edited by the Rev. T. N. Ralstoon (2 vols. 8vo., Nashville, 1855).

BASE BALL, an athletic game much played in certain parts of the United States, where it has of late years attained a prominence equal to that enjoyed by cricket in England. It is derived from the English game of "rounders," which is played with a bat or stick, somewhat in the form of a policeman's club, and a ball, and the essential feature of which consists in obliging the batsman, after hitting the ball pitched to him by one of the players, to run successively to a number of stations or posts placed at equal distances around him, and return to the place from which he started, when he is entitled to score one. In the earliest American modification of this game, the stations or bases, as they were called, were placed at the 4 angles of a square, the sides of which varied from 40 to 60 feet in length, and the batsman stood at one of the angles or in the middle of one of the sides. The pitcher or thrower of the ball was placed immediately in front of him, another player, called the catcher, stood behind him, and at each of the bases was stationed a player who performed fielding or scouting duties. The batsman upon hitting the ball was obliged to run to the first base on his right hand, thence to the next base, and so on until he reached the starting place; and if struck by the ball, thrown by a player, while running the bases, he was out. He was also out if the ball from the stroke of his bat was caught by any player on the opposite side, or if, after striking at the ball delivered to him by the pitcher and missing it, it was caught by the catcher behind him. But though the game was popular with American youth, it was for many years after its introduction governed by no fixed rules, the practice of one locality being no guide for the players of another. Subsequent to 1845 base ball, until then a purely juvenile amusement, began to find favor among grown persons, and clubs of players were formed in the large cities by whom the original game was modified and greatly improved, and regular rules for playing it adopted. As the latter, however, varied in some essential particulars in different clubs, a convention of base ball players was held in New York in 1857 for the purpose of determining upon an authoritative code; and the rules and regulations adopted by this body have since governed players in New York and the central states of the Union. The game thus systematized and improved has become exceedingly popular, and as an outdoor amusement is preferred in the United States to cricket, which has never been much cultivated here except by Englishmen, or to any other game played with bat and ball. —A base ball ground should be a level area of fine turf about 600 feet in length by 400 in breadth, at one end of which a square of 90 feet is marked out. At the lower angle of this, designated as the home base, is fixed an iron plate, while the other angles are indicated by white canvas bags filled with sawdust and attached to posts sunk in the ground. Nine players constitute a side, one side taking the bat and the other the field. The batsman stands at the home base, having the pitcher opposite to him, at the distance of 45 feet, and the catcher behind. A player is also stationed at or near each of the 3 canvas bags, known as the 1st, 2d, and 3d bases, and which are respectively on the right, opposite to, and on the left of the batsman. Beside these, there is a short field behind the pitcher, and a right, centre, and left field at a considerable distance in the rear of the 2d base, the duties of all of whom are to catch or stop the balls and return them to the pitcher or the basemen. A captain, who is generally the catcher, assigns the places of the players on his side and directs the game. When the batsman has struck the ball, or has struck at and missed the ball 3 times, he starts for the first base, and is succeeded by player after player until 3 are put out, when the side occupying the field take their places at the bat, and in like manner play their innings. The methods of putting the batsman out are indicated in the rules given below. When he succeeds in reaching the home base, untouched by a ball in (not thrown from) the hands of an adversary, and after successively touching the 1st, 2d, and 3d bases, he is entitled to score one run. Nine innings are played on each side, and the party making the greatest number of runs wins the game. The bat in common use is a round stick of ash or other hard wood, or of white pine or willow, from 30 to 40 inches in length, and from 2 to 2½ inches in thickness at the lower end, whence it tapers gradually to the handle. Players adopt different styles of batting, some holding the bat inclined over the shoulder, and others hitting from below as in cricket, while many attempt modifications of either method. As the ball is pitched, never thrown, to the batsman, the habit of striking from below would seem to be preferable, and for the same reason it is better to use a light bat which is easily wielded and can enable the batsman to meet the rapid pitching that is now generally practised. The following rules, adopted in 1860 by the national association of base ball players, afford all additional particulars in reference to the game:

1. The ball must weigh not less than 5¾ nor more than 6 oz. avoirdupois. It must measure not less than 9¾ nor more than 10 inches in circumference. It must be composed of India rubber and yarn, and covered with leather, and, in all match games, shall be furnished by the challenging club, and become the property of the winning club, as a trophy of victory.

2. The bat must be round, and must not exceed 2½ inches in diameter in the thickest part. It must be made of wood, and may be of any length to suit the striker.

3. The bases must be 4 in number, placed at equal distances from each other, and securely fastened upon the 4 corners of a square, whose sides are respectively 30 yards. They must be so constructed as to be distinctly seen by the umpire, and must cover a space equal to one square foot of surface. The 1st, 2d, and 3d bases shall be canvas bags, painted white, and filled with sand or sawdust; the home base and pitcher's point to be each marked by a flat circular iron plate, painted or enamelled white.

4. The base from which the ball is struck shall be designated the home base, and must be directly opposite to the 2d base; the 1st base must always be that upon the right hand, and the 3d base upon the left hand side of the striker, when occupying his position at the home base.

5. The pitcher's position shall be designated by a line 4 yards in length, drawn at right angles to a line from home to the 2d base, having its centre upon that line, at a fixed iron plate, placed at a point 15 yards distant from the home base. The pitcher must deliver the ball as near as possible over the centre of the home base, and for the striker.

6. The ball must be pitched, not jerked nor thrown to the bat; and whenever the pitcher draws back his hand, or moves with the apparent purpose or pretension to deliver the ball, he shall so deliver it, and he must have neither foot in advance of the line at the time of delivering the ball; and if he fails in either of these particulars, then it shall be declared a balk.

7. When a balk is made by the pitcher, every player running the bases is entitled to one base, without being put out.

8. If the ball, from the stroke of the bat, is caught behind the range of home and the 1st base, or home and the 3d base, without having touched the ground, or first touches the ground behind those bases, it shall be termed foul, and must be so declared by the umpire, unasked. If the ball first touches the ground, or is caught without having touched the ground, either upon or in front of the range of those bases, it shall be considered fair.

9. A player making the home base shall be entitled to score one run.

10. If 3 balls are struck at and missed, and the last one is not caught, either flying or upon the first bound, it shall be considered fair, and the striker must attempt to make his run.

11. The striker is out if a foul ball is caught, either before touching the ground, or upon the first bound;

12. Or if 3 balls are struck at and missed, and the last is caught, either before touching the ground, or upon the first bound;

13. Or if a fair ball is struck, and the ball is caught either without having touched the ground, or upon the first bound;

14. Or if a fair ball is struck, and the ball is held by an adversary on the 1st base, before the striker touches that base.

15. Any player running the bases is out, if at any time he is touched by the ball while in play in the hands of an adversary, without some part of his person being on a base.

16. No ace nor base can be made upon a foul ball, nor when a fair ball has been caught without having touched the ground; and the ball shall, in the former instance, be considered dead, and not in play until it shall first have been settled in the hands of the pitcher; in either case the players running bases shall return to them, and may be put out in so returning in the same manner as the striker when running to the first base.

17. The striker must stand on a line drawn through the centre of the home base, not exceeding in length 3 feet from either side thereof, and parallel with the line occupied by the pitcher. He shall be considered the striker until he has made the 1st base. Players must strike in regular rotation, and, after the first innings is played, the turn commences with the player who stands on the list next to the one who lost the third hand.

18. Players must make their bases in the order of striking; and when a fair ball is struck, and not caught flying (or on the first bound), the 1st base must be vacated, as also the 2d and 3d bases, if they are occupied at the same time. Players may be put out on any base, under these circumstances, in the same manner as the striker when running to the 1st base.

19. Players running the bases must, so far as possible, keep upon the direct line between the bases; and should any player run 3 feet out of this line, for the purpose of

avoiding the ball in the hands of an adversary, he shall be declared out.

20. Any player, who shall intentionally prevent an adversary from catching or fielding the ball, shall be declared out.

21. If the player is prevented from making a base by the intentional obstruction of an adversary, he shall be entitled to that base, and not be put out.

22. If an adversary stops the ball with his hat or cap, or takes it from the hands of a party not engaged in the game, no player can be put out unless the ball shall first have been settled in the hands of the pitcher.

23. If a ball from the stroke of a bat is held under any other circumstances than as enumerated in section 22, and without having touched the ground more than once, the striker is out.

24. If two hands are already out, no player running home at the time a ball is struck can make an ace if the striker is put out.

25. An innings must be concluded at the time the third hand is put out.

26. The game shall consist of 9 innings to each side, when, should the number of runs be equal, the play shall be continued until a majority of runs, upon an equal number of innings, shall be declared, which shall conclude the game.

27. In playing all matches, 9 players from each club shall constitute a full field, and they must have been regular members of the club which they represent, and of no other club, for 30 days prior to the match. No change or substitution shall be made after the game has been commenced, unless for reason of illness or injury. Position of players and choice of innings shall be determined by captains previously appointed for that purpose by the respective clubs.

28. The umpire shall take care that the regulations respecting balls, bats, bases, and the pitcher's and striker's positions, are strictly observed. He shall keep a record of the game, in a book prepared for the purpose; he shall be the judge of fair and unfair play, and shall determine all disputes and differences which may occur during the game; he shall take especial care to declare all foul balls and balks, immediately upon their occurrence, unasked, and in a distinct and audible manner.

29. In all matches the umpire shall be selected by the captains of the respective sides, and shall perform all the duties enumerated in section 28, except recording the game, which shall be done by two scorers, one of whom shall be appointed by each of the contending clubs.

30. No person engaged in a match, either as umpire, scorer, or player, shall be, either directly or indirectly, interested in any bet upon the game. Neither umpire, scorer, nor player shall be changed during a match, unless with the consent of both parties (except for a violation of this law), except as provided in section 27, and then the umpire may dismiss any transgressor.

31. The umpire in any match shall determine when play shall be suspended; and if the game cannot be concluded, it shall be decided by the last even innings, provided 5 innings have been played, and the party having the greatest number of runs shall be declared the winner.

32. Clubs may adopt such rules respecting balls knocked beyond or outside of the bounds of the field, as the circumstances of the ground may demand; and these rules shall govern all matches played upon the ground, provided that they are distinctly made known to every player and umpire, previous to the commencement of the game.

33. No person shall be permitted to approach or to speak with the umpire, scorers, or players, or in any manner to interrupt or interfere during the progress of the game, unless by special request of the umpire.

34. No person shall be permitted to act as umpire or scorer in any match, unless he shall be a member of a base ball club governed by these rules.

35. Whenever a match shall have been determined upon between two clubs, play shall be called at the exact hour appointed; and should either party fail to produce their players within 15 minutes thereafter, the party so failing shall admit a defeat.

36. No person who shall be in arrears to any other club, or who shall at any time receive compensation for his services as a player, shall be competent to play in any match.

37. Should a striker stand at the bat without striking at good balls repeatedly pitched to him, for the apparent purpose of delaying the game, or of giving advantage to a player, the umpire, after warning him, shall call one strike, and if he persists in such action, 2 and 3 strikes. When 3 strikes are called, he shall be subject to the same rules as if he had struck at 3 fair balls.

38. Every match hereafter made shall be decided by a single game, unless otherwise mutually agreed upon by the contesting clubs.

—The game above described is commonly known as the New York game, and differs in several particulars from that called the Massachusetts game, and which is generally played in New England. In the latter the batsman stands in the middle of one of the sides of a square of 60 feet, the 4 angles of which are marked by 4 stakes representing the bases, the 1st base being on his right and the 4th or home base on his left. The ball is thrown, not pitched or tossed by the thrower, who stands 35 feet in front of the batsman, and a player is put out if the ball from the stroke of his bat is caught without having first touched the ground, or technically speaking "on the fly," by an adversary, if 3 balls are struck at and missed and caught each time by the catcher, or if while running the bases he is struck by the ball thrown by an adversary. The putting a player out by striking him with the ball, which was the practice in the original game of base ball, was discarded in revising the New York game on account of the severe accidents which sometimes resulted. Both games, when properly played, require close attention, courage, and activity, and are admirably adapted to invigorate the frame as well as to afford an agreeable and manly pastime to boys or men. They are not less skilfully constructed than cricket, which has long been considered the most scientific of all games played with the bat and ball, and by many are considered to have an advantage over the latter in respect to the greater rapidity with which the innings alternate, and the opportunities enjoyed by each side for a temporary rest from the labors of fielding.—The dress of a base ball player should consist of light flannel shirt and trowsers, a flannel cap with a projecting visor of white enamelled leather, and canvas shoes with spiked soles.

BATON ROUGE, Battle of, an engagement which took place Aug. 5, 1862, between a U. S. force of 4,000 men under Gen. Williams, and an attacking confederate army of upward of 10,000, led by Gens. Breckinridge and Lovell. News of the approach of the enemy had been received during the week previous by Gen. Williams, and at 3½ A. M. on the 5th the Union troops were drawn up in line of battle about a mile out of the town, the right being supported by Nim's battery, the left by Everett's. At an early hour the pickets of the Union force were driven in. About this time the right wing was engaged by the enemy, and soon after the left still more severely, the fight soon becoming general along the whole line. At first the U. S. troops labored under the disadvantages both of being in the open ground while the enemy were under cover of the woods, and of being obliged to aim toward the east in which the sun was rising. The troops, however, valiantly stood their ground; the 6th Michigan regiment on the right early repulsed their assailants; and though the enemy forced their way into the camps of the 21st Indiana and 20th Maine volunteers, they were in turn obliged by the fire of these troops to retreat precipitately. At one time they had captured two guns of Nim's battery, but by the well directed fire of the remaining pieces and of the infantry, ending with a bayonet charge by the Michigan regiment, they were driven completely back into the woods, leaving the guns behind them. The 14th Maine regiment, forming the centre, particularly distinguished themselves; but the most desperate fighting throughout the engagement was done by the troops of the Indiana 21st. Meanwhile, the gunboats Kineo and Katahdin took a position on the river near the right of the U. S. force, and the Essex and Sumter upon the left. As the confederates fell back into the woods, the latter two first, and later all four shelled the woods vigorously and with effect, holding the enemy in check while the Union troops now slowly fell back toward the town. The fight between the land forces had lasted about 3 hours; in the afternoon it was renewed for a time. During the afternoon also and the entire night the gunboats continued to shell the woods; but the enemy had already fled. Gen. Williams was killed by a cannon shot early in the fight. The Union loss in killed and wounded was about 250, several field officers being among the latter; the loss of the confederates is supposed to have been much greater.

BAYARD, George D., brigadier-general of volunteers in the U. S. army, born in New York, killed at Fredericsburg, Va., Dec. 13, 1862. He was appointed to the West Point military academy from New Jersey, was graduated in 1856, obtained a commission as 2d lieutenant in the 1st cavalry, and became captain in the 4th cavalry, Aug. 20, 1861. He obtained leave of absence for the purpose of taking command of the 1st Pennsylvania volunteer cavalry, and was commissioned brigadier-general of volunteers April 28, 1862, and assigned to duty in western Virginia. He subsequently served in the army corps of Gen. McDowell, and was in the army of Virginia under Gen. Pope. When the Union troops recrossed the Potomac into Virginia after the battle of Antietam, he commanded a cavalry brigade in the advance. He was attached to Gen. Franklin's command at the attack on Fredericsburg.

BEAUREGARD, Peter Gustavus Toutant, a general of the southern confederacy, born on his father's plantation near New Orleans about 1818. He was graduated at West Point in 1838, second in the class with Gens. McDowell and Barry, and was appointed 2d lieutenant in the 1st artillery, from which he was transferred a few days later to the corps of engineers. He was promoted to be 1st lieutenant in 1839, and being ordered to Mexico during the war won the brevet rank of captain in the battles of Contreras and Churubusco, and that of major at Chapultepec, where he was twice wounded. He was present at the taking of the capital, and in the conflict at the Belen gate received another wound. In 1853 he was commissioned captain. After his return from Mexico he had charge of the construction of the New Orleans mint and custom house, and of the fortifications near the mouths of the Mississippi. He resigned his commission in the U. S. army, Feb. 20, 1861, and joining the forces of the southern confederacy, was appointed brigadier-general, and ordered to Charleston, S. C. He conducted the attack upon Fort Sumter, relinquished his command to Col. R. H. Anderson in May, and in June assumed command of the confederate troops at Manassas. On July 21 he fought and won the battle of Bull run, and on the same day was promoted to be general in the regular army of the confederate states. On Nov. 3 he addressed a letter from Centreville to the "Richmond Whig," entreating his friends "not to trouble themselves about refuting the slanders and calumnies aimed against him." On Jan. 30, 1862, he formally took leave of the army of the Potomac, and on March 5 took command of the army of the Mississippi, under Gen. A. S. Johnston, who joined him at Corinth about April 1, and directed the battle of Shiloh until he was killed, April 6, after which Gen. Beauregard held the chief command. On the 27th he issued an address acknowledging the loss of the Mississippi river, and calling "on all patriotic planters owning cotton in the possible reach of our enemies to apply the torch to it without delay or hesitation." Fortifying himself at Corinth, he held the army of Gen. Halleck in check for nearly two months, and when forced to evacuate that place by the Union commander, made good his retreat with comparatively little loss. He was soon afterward relieved at his own request on account of his health, and went to Eufaula Springs, Ala., where for some time his life was despaired of. He reported himself ready for duty in June, and in August was appointed to the command of the military department composed of South Carolina and Georgia. On receiving this appointment he wrote a letter to Gen. Bragg, which was intercepted by the Unionists and published, expressing his disappointment at not having been restored to the command of the department of the Mississippi. He is one of the five full generals in the confederate army, the highest rank in that service.

BEAVER DAM. See Chickahominy.

BEE, Barnard E., brigadier-general in the confederate army, born in Charleston, S. C., killed at the battle of Bull run, July 21, 1861. He was graduated at the U. S. military academy in 1845, and appointed brevet 2d lieutenant in the 3d infantry. He was ordered to Mexico, and brevetted 1st lieutenant for gallantry at Cerro Gordo, where he was wounded, and captain for gallant and meritorious conduct in the battle of Chapultepec, where he was one of the storming party. He was commissioned 1st lieutenant in 1851, promoted to be captain in the 10th infantry in 1855, and being ordered to Utah was acting lieutenant-colonel of a battalion of volunteers from Dec. 1857, to Sept. 1858. After the secession of the southern states he resigned his commission, March 3, 1861, and was appointed brigadier-general in their army.

BELMONT, a small post town of Mississippi co., Mo., on the Mississippi river, opposite Columbus, Ky., where a battle was fought Nov. 7, 1861. On the evening of Nov. 6 Gens. Grant and McClernand left Cairo with a Union force of 2,850 men, and moved down the river toward Columbus for the purpose of preventing the confederates from sending reënforcements to Price's army in Missouri. As Columbus was known to be strongly garrisoned, demonstrations were ordered against it from two directions, for the purpose of distracting the attention of the enemy; the Union force also made a feint of landing on the Kentucky side in the night of the 6th. On the morning of the 7th the expedition landed on the Missouri shore, 2½ m. above Belmont, and marched to attack the enemy, who had an important camp there. The confederate force, under Gen. B. F. Cheatham, numbering about 4,000, offered battle between their camp and the point where the Union troops landed; they were driven back, step by step, to their camp, where they had strengthened their position by felling the timber around them; the Union troops charged through this, and drove the enemy to the bank of the river and to their transports. Inasmuch as the guns of Columbus commanded the position at Belmont, it was impossible to hold the captured camp; accordingly, an order was given to destroy the property, which was done at once. While this was going on the confederates crossed from Columbus, above the Belmont camp, joined the troops who had fled in that direction, and formed in the rear of the Union forces with the design of cutting them off from their transports. Gen. McClernand directed the fire of his artillery against this body of the enemy, and then moved briskly with his whole force through the ranks of the confederates thus broken; then ensued severe fighting, till the Union troops reached their transports, the enemy's forces being increased by reënforcements to nearly 7,000. After the embarkation had been successfully accomplished, the confederates showed themselves in some force near the shore, but were opened upon by the gunboats with such spirit as to prevent them from impeding the retreat, while they suffered severely from this well directed fire. The loss on the Union side was 84 killed, 150 wounded, and about 150 missing. The confederate loss, according to their own statement, was 600 killed and wounded. The object of the expedition was effected by the destruction of the enemy's camp equipage and their means of transportation, and about 4,000 blankets and two pieces of artillery were captured and two destroyed.

BENFEY, THEODOR, a German orientalist, born at Nörten, near Göttingen, Jan. 28, 1809. He studied philology at Göttingen under Ottfried Müller and Dissen, at Munich under Thiersch and Ast, and also at Frankfort and Heidelberg; and in 1834 he became professor of the Sanscrit language and comparative grammar at Göttingen. His principal works are: *Ueber die Monatsnamen einiger alten Völker* (Berlin, 1836); *Griechisches Wurzellexikon* (2 vols., Berlin, 1839–'42), for which he received the Volney prize from the French institute; the elaborate article *Indien* in Ersch and Gruber's cyclopædia; *Ueber das Verhältniss der ägyptischen Sprache zum semitischen Sprachstamm* (Leipsic, 1844); *Die persischen Keilinschriften, mit Uebersetzung und Glossar* (Leipsic, 1847); *Die Hymnen des Sama-Veda*, also with a translation and glossary (Leipsic, 1848); *Beiträge zur Erklärung des Zend* (Göttingen, 1853); and *Handbuch der Sanskritsprache* (2 vols., Göttingen, 1852–'4), comprising a grammar, chrestomathy, and glossary, of which he has published an abridgment for beginners.

BENJAMIN, JUDAH PETER, secretary of state in the government of the confederate states, born in 1812 in St. Domingo, where his parents, both Hebrews from Jamaica, were then residing. In 1816 the family emigrated to Savannah, Ga., whence in 1825, just after he was 13 years old, the son was entered at Yale college, but left without graduating in 1827, about which time his father died. In 1831 he went to New Orleans to study law, and it is said reached that place with $25 as his total fortune. He entered a notary's office, and at the same time obtained a situation as teacher in a school; giving 8 hours a day to his duties as teacher and 8 to rest and recreation, he devoted the remainder to legal studies. Among his pupils at this period was Miss St. Martin, the lady whom he afterward married. Admitted to the bar in 1834, he soon rose to the head of his profession in New Orleans. Attached to the whig party in politics, he was in 1845 a member of the convention held to revise the constitution of the state, and advocated in that body the addition of an article requiring the governor of the state to be always a citizen born in the United States. It is said that in 1849 President Taylor offered him the office of attorney-general of the United States, and that he declined it. Always disposed to engage in speculations, he embarked in sugar planting, on which subject he published several pamphlets, but never made money by his operations in this line. In 1852, owing to his popularity among the whig leaders in the state, he was chosen to succeed the Hon. Solomon N. Downs in the U. S. senate, his official term ending March 4, 1859. In the senate he distinguished himself, and having been gradually led by the progress of the controversy respecting slavery to ally himself with the democrats, he attained to prominence in the southern wing of the democratic party. This, however, did not prevent a sharp personal controversy between him and Mr. Jefferson Davis, which was about to cause a duel when Mr. Davis apologized on the floor of the senate for the harsh language he had used, a too great facility in which he attributed to his military education. Mr. Benjamin advocated the Kansas-Nebraska bill of Mr. Douglas in 1854, but subsequently insisted that the principle of popular sovereignty, which Mr. Douglas held to be the essential feature of that measure, was definitively set aside by the declaration of the supreme court in the Dred Scott case, which he contended ought to be conclusive both as regarded the democratic party and the country at large. Indeed, he was so decided an advocate of the legal claims of slavery, that he drew from Mr. Wade of Ohio, on one occasion, the witty charge that he was "a Hebrew with Egyptian principles." Reëlected to the senate in 1859, chiefly through the influence of his colleague, Mr. John Slidell, he was absent in California in the latter part of 1860, having been engaged as counsel in a lawsuit respecting the ownership of the New Almaden quicksilver mine; but returning shortly after the opening of congress, he announced, Dec. 31, 1860, his adhesion to the southern cause in a speech of much power and effectiveness, in which he declared that the South could never be subdued. He withdrew from the senate, together with his colleague, Mr. Slidell, Feb. 4, 1861, and was immediately appointed attorney-general in the provisional government of the southern confederacy. In Aug. 1861, he became acting secretary of war in place of L. P. Walker, to which post he was definitely appointed Nov. 10, and retained it till after the capture of Roanoke island by the Union forces, Feb. 7, 1862, which surrender a committee of the confederate congress denounced in their report as due to incompetency and neglect of duty on the part of the war department. Mr. Benjamin thereupon resigned that place, and was appointed secretary of state instead of Mr. R. M. T. Hunter of Virginia, who had resigned on being elected to the confederate senate. This office Mr. Benjamin still holds.—Among the remarkable events in Mr. Benjamin's public career were his share in the Tehuantepec railroad speculation, in which, had it been successful, he was to have had a large interest in consideration of his services in securing the favor of the U. S. government and the support of capitalists, and his participation in the so called Houmas land grant. The U. S. senate appointed a committee, of which the Hon. Robert Toombs was chairman, to investigate this latter affair; Mr. Toombs in his report denounced the transaction with much severity of language, and the clause confirming the titles of Messrs. Benjamin, Slidell, and others, introduced without being suspected in a bill to settle land claims in Missouri, was subsequently repealed.

BENTON, William P., brigadier-general of volunteers in the U. S. army, born in Maryland, emigrated early in life to Wayne co., Ind., practised law, and was elected a judge of the court of common pleas in 1856. When the civil war broke out he took command of the 8th Indiana volunteers, at the head of which he fought with distinction in Col. Jefferson C. Davis's brigade at the battle of Pea ridge. He was commissioned brigadier-general of volunteers April 28.

BERRY, Hiram Gregory, brigadier-general of volunteers in the U. S. army, born in Thomaston (now Rockland), Me., Aug. 27, 1824. He worked as a carpenter for some years, was afterward successfully engaged in navigation, served in the state legislature, was mayor of Rockland, and held various offices in the Maine militia. Under the call for troops in the spring of 1861, he was made colonel of the 4th Maine volunteers (June 4), and was in the battle of Bull run. He was appointed brigadier-general of volunteers March 17, 1862, and distinguished himself in the battles of Williamsburg and Fair Oaks.

BETHEL, Great and Little, places situated on the road from Fortress Monroe to Yorktown, Va., the latter being about 9 m. from Hampton, the former about 3 m. nearer Yorktown. A confederate outpost of some strength was established at Little Bethel early in June, 1861, and on the night of the 9th a strong detachment of U. S. troops, under command of Brig. Gen. Pierce, went from Fortress Monroe and Newport News to surprise this post, thence being ordered to push on, if successful in the first attack, and reconnoitre a battery at Great Bethel, with the intention of attacking that in case it should appear prudent to do so. The force consisted of Duryee's New York zouaves, Col. Townsend's Albany regiment, and Col. Bendix's New York regiment, with detachments from the 1st Vermont and 3d Massachusetts regiments. A portion of the force was to pass to the rear of Little Bethel, thus cutting off the enemy, while Cols. Townsend and Bendix, marching at different times, were to effect a junction within a mile and a half of the same place, attacking it in front. The detachment of Col. Townsend was fired upon by that of Col. Bendix, being mistaken for the enemy, whereby 2 were killed and 29 wounded. Thus all hope of surprising the confederates was destroyed, and on reaching Little Bethel it was found that they had abandoned the place. In spite of the fact that the chief purpose of the reconnoissance was thus defeated, it was resolved to go on to Great Bethel. Accordingly, Little Bethel was destroyed, and the column moved forward. They soon encountered a masked battery, and in attempting to take it were hopelessly repulsed, though fighting with marked bravery for an hour and a half. The confederate force was about 1,500. The loss on the Union side was 16 killed, 34 wounded, and 5 missing. Among the killed were Lieut. Greble, of the regular army, and Major Theodore Winthrop, aid to Gen. Butler.

BIDDLE, James, an officer of the U. S. navy, born in Philadelphia in Feb. 1783, died there, Oct. 1, 1848. He entered the navy as midshipman in Feb. 1800, and made his first cruise under the command of Commodore Thomas Truxtun, on the West India station. During the war with Tripoli he served in the Constellation and Philadelphia, and after the loss of the latter ship in the harbor of Tripoli (see Bainbridge, William) was a prisoner 19 months. At the conclusion of peace he was released and returned to America, arriving at Philadelphia in Sept. 1805. From this period until the breaking out of the war with Great Britain in 1812, he was employed in various situations, and was for a short time in the merchant service, in which he made a voyage to China. In Feb. 1807, he was promoted to be lieutenant. On Oct. 13, 1812, he sailed from Philadelphia in the sloop of war Wasp, Capt. Jacob Jones, which when 6 days out captured the British sloop of war Frolic, Capt. Whinyates. Lieut. Biddle distinguished himself highly in this action, heading the boarding party. He was placed in command of the prize, but both ships were soon taken by the Poictiers (74), and carried into Bermuda. In March, 1813, upon being exchanged, Lieut. Biddle was promoted to the rank of master commandant, and appointed to command a flotilla of gunboats upon the Delaware. He was soon afterward transferred to the Hornet (18), attached to the squadron of Commodore Stephen Decatur, jr., and was for many months blockaded in the harbor of New London. He finally obtained permission to attempt to escape, in which he was successful, and joined a force in New York, commanded by Decatur, destined to cruise in the East Indies. On Jan. 23, 1815, he sailed from New York in company with the Peacock, Capt. Warrington, and Tom Bowline, a store vessel. Com. Decatur had sailed in the President (44) a day or two before. On March 23, off the island of Tristan d'Acunha, Capt. Biddle captured, after a sharp action, the British vessel Penguin, Capt. Dickinson, mounting 16 32-lb. carronades and two long 12s, with a total complement of 132 men. Her loss was 14 killed, including her commander, and 28 wounded. The Hornet was rather superior in force, mounting 18 32-lb carronades and two long 12s. Her loss was but 1 killed and 10 wounded, including Capt. Biddle, severely. Soon after this engagement the Hornet was joined at Tristan d'Acunha by the Peacock, and both ships sailed for the cape of Good Hope. On April 27 a British 74-gun ship was discovered, which chased the Hornet 36 hours, firing upon her several times, at a distance of not over ¾ of a mile. Capt. Biddle, still feeble from his wounds, saved his ship, though with the loss of his guns and equipments, which were thrown overboard to lighten her. This rendered it necessary to make for a neutral port, and he put into San Salvador. On his arrival there, learning that peace had been concluded between the United States and England, he sailed for New York, where he arrived July 30. For his action with the Penguin congress voted Capt. Biddle a gold medal. Philadelphia presented him with a service of plate, and other honors were bestowed upon him. In Feb. 1815, he was promoted to the rank of captain. He participated largely in active service after the war of 1812, holding special and important commands at various times, in the Pacific, upon the coast of South America, and in the West Indies, and of a squadron in the Mediteranean from 1830 to 1832. While upon the last named service he was employed as a commissioner to negotiate a treaty with the Ottoman government.

BIENVILLE, Jean Baptiste Lemoine, sieur de, the 2d colonial governor of Louisiana, born in Montreal, Feb. 23, 1680, died in France in 1768. He was the son of Charles Lemoine (see Lemoine, in this supplement), and with his brother Iberville early entered the naval service of France, and served under him during 7 voyages. He was severely wounded in the head in a conflict off the coast of New England between the French ship Pelican, 42, commanded by Iberville, and three English men of war, one a 52 and the others carrying 42 guns each, in which the Pelican was victorious. It is said that he was afterward for a time governor of Detroit, but this seems hardly probable considering his extreme youth at the time. When Iberville set out from France in 1698 on his expedition to found a colony at the mouth of the Mississippi, he took with him his two brothers, Sauvolle and Bienville. The first settlement being established at Biloxi, and Sauvolle being left in command, Iberville returned to Europe, while Bienville was engaged in explorations of the surrounding country. In 1699, while descending the Mississippi in a small boat, he met, at a point still called English Town, 18 m. below the site of New Orleans, an English armed vessel going up the river in search of a place to found a colony; but on Bienville's representation that the region was already occupied by the French, the Englishman put about and abandoned the enterprise. Iberville returned, Dec. 7, with a commission for Sauvolle as governor of Louisiana; and on Jan. 17, 1700, Bienville assisted in constructing a fort on the river 54 m. above its mouth, where he was left in command on Iberville's second return to France. On the death of Sauvolle, July 22, 1701, Bienville succeeded him in the direction of the colony, whose principal seat was now transferred to Mobile. In 1704 he was joined by his younger brother Châteaugay with a band of 17 settlers from Canada, who were followed by another ship bringing from France "20 girls sent by his majesty to be married to the Canadians and the other inhabitants of Mobile in order to consolidate the colony"—an addition which led to trouble in 1706, when these women revolted at the necessity of living on maize. Bienville had other difficulties in abundance—pestilence, and quarrels with La Salle, the royal commissary, who on Dec. 7, 1706, charged Bienville and his brothers with "every sort of malfeasances and dilapidations;" and on Iberville's death he was threatened with Indian hostilities. Finally, on July 13, 1707, he was dismissed from his office as governor, but as his successor died on his way from France he still retained the office. In 1708, the attempt to cultivate the lands of the colony by Indian slaves having failed, Bienville proposed to the home government to procure negroes from the French Antilles. "We shall give," he said, "three Indians for two negroes. The Indians, when in the islands, will not be able to run away, and the negroes will not dare to become fugitives in Louisiana, because the Indians would kill them." In Jan. 1709, the colonists were reduced to live on acorns; in 1710 they were to a great extent dependent for food upon the Indians about them; in 1712 the king granted to Antoine Crozat the exclusive privilege of trading with Louisiana for 15 years, including the right of bringing in every year a ship load of negroes from Africa. On May 17, 1713, Bienville was superseded by the arrival of La Motte Cadillac as governor, who brought with him for Bienville a commission as lieutenant-governor. Of course the two quarrelled, but the dispute was much inflamed when Bienville declined to marry the daughter of Cadillac, who had fallen in love with him, and had persuaded her father to propose the alliance. Cadillac sent him with 50 men into the country of the Natchez, apparently hoping that he would be destroyed; but by cunning treachery and unscrupulous severity of conduct he gained the advantage over the Indians, so far as to compel them to build for him a strong fort, in which he left a garrison, and returned to Mobile, Oct. 4, 1716. On March 9, 1717, De l'Epinay arrived to supersede Cadillac as governor, and Bienville was decorated with the cross of St. Louis and received the gift of Horn island on the coast of the present state of Alabama. He quarrelled with the new governor, whose administration was concluded on the surrender of the charter of Antoine Crozat and the formation of Law's Mississippi company at Paris, Sept. 6, 1717. On March 9, 1718, arrived the first expedition sent to Louisiana by this company, consisting of three vessels, and bringing a commission for Bienville as governor of the colony. He now planted the city of New Orleans, and on May 14, war having broken out between France and Spain, he took Pensacola, where he placed his brother Châteauguay in command. Recaptured by the Spanish, Bienville retook it in September. In 1723 he transferred the seat of government to New Orleans. On Jan. 16, 1724, he was ordered to France to answer charges that had been brought against him. Before leaving the colony in March, he published his so called black code, relating chiefly to slaves, which remained in force till after the transfer of Louisiana to the United States, and was afterward to a great extent preserved in the negro laws of the state; this code also banished Jews, and prohibited every religion but the Roman Catholic. On Aug. 9, 1726, he was removed from his office of governor, Périer being appointed in his place; at the same time Châteauguay was removed from the office of lieutenant-governor and ordered to France. There Bienville remained until 1733, when he was reappointed governor of the colony and raised to the rank of lieutenant-general. In 1736 he conducted an unsuccessful campaign against the Chickasaws, and in 1739 set out on another expedition against them, but returned in March, 1740, without having made an attack for fear of "compromising the arms of the king." One of his subordinates, however, advanced at the head of a small force, when the Chickasaws submitted and made a treaty of peace. In consequence Bienville was superseded, and on May 10, 1743, departed for France, where he remained through the rest of his life. In 1765, in his 86th year, he joined the agent of Louisiana in entreating the French government not to surrender that country to Spain.

BIGELOW, Erastus B., an American inventor, born in West Boylston, Mass., in April, 1814. He was intended for a physician, but his father, a cotton manufacturer, having failed in business, the son was left without means to finish his studies. He resolved to apply himself to some mechanical invention by which he hoped to earn enough money to continue his education, and in the course of a year contrived an automatic loom for weaving knotted counterpanes. He obtained a patent for this machine in 1838, and made a contract with certain capitalists to build 3 looms; but before the looms were built, having seen some imported counterpanes of a new kind which would soon supersede those made by his machine, he consented to the cancelling of the contract, and in 1840 produced another loom capable of weaving the new fabric. This machine is still in use. In the mean time he had invented a loom for weaving coach lace, and soon afterward, having given up the intention of studying medicine, turned his attention to carpet weaving. In 1839 he entered into an agreement with the Lowell manufacturing company, under which before the close of the year he produced the first power loom for weaving 2-ply ingrain carpets. It was at once successful, and, having been repeatedly improved by the inventor, was introduced into a number of manufacturing towns, and is still in very extensive use. (See Carpet, vol. iv.) In the spring of 1862 Mr. Bigelow proposed a scheme of uniform taxation throughout the United States by means of stamps, and in the same year he published "The Tariff Question considered in regard to the Policy of England and the Interests of the United States" (large 4to., Boston).

BIRNEY, David Bell, brigadier-general of volunteers in the U. S. army, born in Huntsville, Ala., May 29, 1825. He removed to Cincinnati in his youth with his father, James G. Birney, and studied law, but before commencing practice spent several years in Michigan, engaged in commercial pursuits. In 1848 he removed to Philadelphia. At the first call of the president for 75,000 volunteers in April, 1861, he raised a regiment, the 23d Pennsylvania volunteers, to serve for three months, and when that time expired reorganized it for a new term of service. In Dec. 1861, he was appointed brigadier-general of volunteers, and placed in command of a brigade which was distinguished at Yorktown, Williamsburg, and the battles before Richmond, and especially in the second battle of Bull run, Aug. 29, 1862.

BISCHOF, Karl Gustav, a German geologist and chemist, born in a suburb of Nuremberg, Jan. 18, 1792. He studied at Erlangen, devoting himself especially to mathematics and astronomy, and subsequently to chemistry, physics, and geology, succeeded his teacher, Prof. Hildebrand, in the chair of chemistry at the university of Erlangen, and in 1822 was called to a similar position in that of Bonn, which he still holds (1862). His works are numerous and highly esteemed. The most important are: *Entwickelung der Pflanzensubstanz* (Erlangen, 1819); *Lehrbuch der reinen Chemie* (Bonn, 1824); *Die vulkanischen Mineralquellen Deutschlands und Frankreichs* (Bonn, 1826); *Die Wärmelehre des Innern unsers Erdkörpers* (Leipsic, 1837); and *Lehrbuch der chemischen und physikalischen Geologie* (Bonn, 1847 *et seq.*); beside "Lectures" (1843) and "Popular Letters to a Lady" (1848–'9) on natural science.

BLACK HAWK, a chief of the Sacs and Foxes, born about 1768 at the principal Sac village on the E. shore of the Mississippi, at the mouth of the Rock river, died at the village of his tribe on the Des Moines river, Iowa, Oct. 3, 1838. About 1788 he succeeded his father, who had been killed by a Cherokee, as head chief of the Sacs. In 1804, by a treaty made with Gen. Harrison at St. Louis, the Sacs and Foxes sold to the United States their lands, extending some 700 miles along the Mississippi, for $1,000 a year. Black Hawk maintained that the chiefs who signed this treaty were drunk at the time, but it was ratified by another treaty in 1815, after the close of the war of 1812, in which Black Hawk with some of the Sacs took part on the side of England; and again by a third treaty at St. Louis in 1816, which was signed by Black Hawk himself. In 1823, in compliance with these treaties, the greater part of the Sacs and Foxes, led by a chief named Keokuk, removed across the Mississippi, but Black Hawk and his followers remained behind. In 1829 the land occupied by the Sac village was sold to white settlers, and in the spring of 1831 the corn which the Indians planted was ploughed up. Black Hawk threatened retaliation. Governor Reynolds of Illinois called out the militia, Gen. Gaines took possession of the village, and Black Hawk retreated across the Mississippi, and made a new treaty agreeing not to return into Illinois without permission. Nevertheless, having been informed that several other tribes would assist him, and believing that the British, to whom he had always been friendly, would give him aid, he recrossed the Mississippi with his people in the spring of 1832, and ascended the Rock river to a Winnebago village. Here a band of 50 of his warriors was attacked by a force of 300 mounted militia, who had shot the bearer of a flag of truce sent by the chief to meet them, and who were put to flight in the encounter which followed. Black Hawk's men were now divided into squads and butchered the settlers at every opportunity, and general alarm prevailed throughout Illinois and Wisconsin. Troops were sent thither from the eastern states, and Gen. Scott took command; but the cholera breaking out among the soldiers, interfered greatly with their operations. Finally the Indians were driven to the Wisconsin river, and defeated there on July 21 by Gen. Dodge, some 40 of their braves being killed in the battle, and again at the river Badaxe by Gen. Atkinson on Aug. 2. Black Hawk escaped, but was taken by a couple of Winnebagoes and delivered to Gen. Scott at Prairie du Chien, Aug. 27, 1832. A new treaty was made at Rock island, Sept. 21, by which the lands of the Sacs and Foxes W. of the Mississippi were sold, and the tribes, some 3,000 in number, removed to the region about Fort Des Moines. Black Hawk with his two sons and seven others of the principal warriors were detained as hostages, were seen by the curious in passing through the principal cities of the eastern states, and were confined in Fortress Monroe until June 5, 1833, when they were released and returned to their tribe.

BLAIR, Montgomery, an American statesman, born in Franklin co., Ky., May 10, 1813, was graduated at West Point military academy in 1835, and was appointed a 2d lieutenant in the 2d artillery, in which capacity he served in the Florida war. He resigned on May 20, 1836, studied law, and began the practice of that profession in St. Louis, Mo., in 1837. He was appointed U. S. district attorney for Missouri in 1839, and held that office till 1843, when he became a judge of the court of common pleas, in which post he remained till 1849, when he resigned it. In 1842 he was also mayor of St. Louis. In 1852 he removed to Maryland, where he resided until his appointment as postmaster-general in the cabinet of President Lincoln in March, 1861. Previous to the repeal of the Missouri compromise he had been a democrat, but after the consummation of that measure he attached himself to the republican party, and was removed accordingly by President Buchanan from the office of solicitor to the court of claims, to which he had been appointed by President Pierce; and in 1860 he presided over the republican state convention of Maryland, and was a candidate for presidential elector on the republican ticket. In the famous Dred Scott case he was counsel for the plaintiff.

BLAKE, George Smith, an American naval officer, born in Worcester, Mass., in 1803. He entered the navy as a midshipman in 1818, and his early services were in the Independence and Columbus, Commodore William Bainbridge, and the Alligator, Lieut. Comdt. R. F. Stockton, returning to the United States from the African station in 1821 in a Portuguese prize. He next passed several years in the merchant service on furlough; in 1827 was promoted to be lieutenant, and attached to the Grampus on the West India station, cruising for the suppression of piracy; was employed in 1832 on a special survey of Narraganset bay, and from 1835 to 1846 on the survey of the coast; and in 1846, when the Mexican war broke out, obtained command of the 10-gun brig Perry. While cruising off the coast of Cuba he encountered the noted hurricane of October of that year. The Perry scudded before this hurricane 21 hours, her track describing nearly a circle, when she was thrown upon the coast of Florida a mere wreck. She was extricated, however, and taken to Philadelphia under jury masts. Lieut. Comdt. Blake requested a court of inquiry, but the formality was not deemed necessary, the secretary of the navy stating in a letter officially published that the department considered his claims to the character of a "zealous and skilful officer" rather "elevated than depressed by his conduct in the trying and perilous circumstances in which he was placed." In 1847 he was promoted to be commander, in which grade he was attached for some time to the bureau of construction and equipment. He also served as fleet captain and commander of the razee Independence in the Mediterranean for 3 years, and was employed on special duty connected with the Stevens battery. In 1855 he was promoted to the rank of captain, and in 1857 was ordered to relieve Capt. (now Rear Admiral) Goldsborough as superintendent of the U. S. naval academy, which office he still holds. On the outbreak of the civil war demonstrations were made toward seizing the academy (then at Annapolis, Md.) and the frigate Constitution, which was lying in the harbor as the school ship of the institution; but prompt measures were taken to prevent the seizure, and, according to the official report of the secretary of the navy, "the young men, under the superintendence and guidance of Capt. Blake, contributed in no small degree to the result." On the removal of the academy to Newport, R. I., it was deemed important, says Secretary Welles, in his annual report of Dec. 1861, that the superintendent should be continued in his office until the institution is permanently reëstablished. On the reorganization of the navy in July, 1862, Capt. Blake was promoted to be commodore. He has been nearly 45 years in the navy, and has been employed 37 years, 17 years being on sea service.

BLANCHARD, Albert G., a general in the service of the confederate states, born in Massachusetts about 1810, was graduated at West Point in 1829 and appointed brevet 2d lieutenant in the 3d infantry; became 2d lieutenant Aug. 31, 1833, 1st lieutenant Oct. 30, 1836, and resigned Oct. 1, 1840, to enter upon commercial life at New Orleans. In 1843 he became director of public schools in that city, and retained that office for two years. He volunteered for the Mexican war in May, 1846, and served as captain in Dakin's Louisiana regiment until May 15, 1847, having distinguished himself at Monterey, and having, April 9, 1847, declined the appointment of captain of voltigeurs. He was appointed, May 27, 1847, major in the 12th infantry, and served in that capacity till the close of the war, being disbanded with his regiment July 25, 1848. He now returned to New Orleans, where on Feb. 1, 1849, he became district surveyor of the 2d municipality. After the outbreak of the civil war in 1861, he was appointed a brigadier-general in the confederate army, which rank he still retains.

BLENKER, Louis, brigadier-general of volunteers in the U. S. army, born in Worms, Hesse-Darmstadt, in 1812. He was brought up to his father's craft, that of a jeweller, but at the age of 20 enlisted in the Bavarian legion, which was raised to accompany the newly elected King Otho to Greece. His corps was actively employed against the Mainotes and Roumeliotes, and Blenker rose to be sergeant, and when the legion was disbanded in 1837 received with his discharge the rank of lieutenant. He studied medicine for a little while in Munich, then engaged in the wine trade at Worms, and in 1849 became a leading member of the revolutionary government in that city, being burgomaster and commander of the national guard. Joining the revolutionary army at the head of a considerable body of men, he fought in one or two successful engagements with the Prussians, and then took command of that portion of the insurgent forces destined to cover Carlsruhe and sustain Mieroslawski. After the combat of Durlach he occupied Mühlburg and Knielingen, from which he was driven after a hard struggle. On the departure of Mieroslawski he joined the forces of Sigel, but the revolution was now completely crushed, and he retired into Switzerland. Ordered, in Sept. 1849, to leave that country, he embarked at Havre for the United States, and settled on a farm in Rockland co., N. Y. He soon removed to New York city, where he was engaged in commerce until 1861. He then raised the 8th regiment New York volunteers, with which he marched to Washington in May, and shortly before the advance upon Centreville was put in command of a brigade of the 5th division under Col. Miles. At the first battle of Bull run, he covered the retreat with great steadiness, and for his services on that day was commissioned a brigadier-general of volunteers, Aug. 9. He remained with the army of the Potomac, commanding a division, until the commencement of the Yorktown campaign, when he was ordered to western Virginia. Gen. Fremont, after entering the valley of Virginia in July, 1862, relieved him from duty, and since that time he has not been in active service.

BLUNT, James G., brigadier-general of volunteers in the U. S. army, born in Hancock co., Me., in 1826. From 14 to 19 years of age he was a sailor. He then removed to Ohio, was graduated at the Starling medical college, Columbus, in 1849, practised his profession in Dark co., Ohio, until 1856, and then settled in Anderson co., Kansas, as a physician and farmer. He was a prominent leader of the free state party during the struggles of 1856–'7, and a member of the convention which framed the present constitution of the state. In July, 1861, he took the field as lieutenant-colonel of the 3d Kansas volunteers. He commanded the cavalry of Gen. James Lane's brigade, and on April 8, 1862, was appointed brigadier-general of volunteers, and assigned to the command of the department of Kansas. On Oct. 22, 1862, he engaged a confederate force at Maysville, near the N. W. corner of Arkansas, and totally routed it after an action of one hour.

BOGGS, Charles Stuart, an officer of the U. S. navy, born in New Brunswick, N. J., Jan. 28, 1811. He is a nephew of Capt. James Lawrence, of the frigate Chesapeake, who fell in the action with the Shannon. He entered the navy in 1826, and made his first cruise in the sloop of war Warren, Capt. Kearney, on the Mediterranean station. Subsequently he served in the West Indies and the gulf of Mexico, on the coast of Africa, and in the Pacific; was attached during the Mexican war to the steamer Princeton, of Commodore Conner's squadron, in the gulf of Mexico; and in 1851 was ordered to the Brooklyn navy yard as 1st lieutenant. He was promoted to be commander in 1855, and assigned by the secretary of the navy to the U. S. mail steamer Illinois, which he commanded for 3 years. He was then appointed lighthouse inspector for the coast of California, Oregon, and Washington territory. When the civil war broke out in 1861, he was ordered home and placed in command of the gunboat Varuna, belonging to Flag Officer Farragut's gulf squadron. In the attack of the squadron upon the Mississippi forts, April 18–24, 1862, he destroyed 6 of the confederate gunboats, but finally lost his own vessel, after driving his antagonist ashore in flames. When he found the Varuna sinking, he ran her ashore, tied her to the trees, and fought his guns until the water was over the gun tracks. He returned to Washington as bearer of despatches, was ordered to the command of the new sloop of war Juniata, and soon afterward was promoted to the rank of captain.

BOHLEN, Henry, brigadier-general of volunteers in the U. S. army, born in Germany, killed in Virginia, Aug. 23, 1862. He came to America while a young man, and settled as a wine and liquor merchant in Philadelphia, where he amassed a fortune. In 1861 he entered the army as colonel of the 75th (German) regiment of Pennsylvania volunteers, and was attached to Gen. Blenker's command. He was commissioned brigadier-general of volunteers April 28, 1862, served under Fremont in western Virginia, distinguished himself at the battle of Cross Keys (June 8), and was specially commended for his services in the Shenandoah valley under Gen. Sigel. He covered the retreat of the army of Virginia across the Rappahannock, and fell while directing the movements of his brigade in a skirmish near that river.

BONHAM, Milledge L., a general in the service of the confederate states, born in South Carolina about 1815, was graduated at the South Carolina college in 1834, studied law, was admitted to the bar at Columbia in 1837, and settled at Edgfield Court House; was solicitor for the southern circuit of the state from 1848 to 1850; was elected a representative in congress from the 4th district in 1856, and was reëlected in 1858, and served as such until the withdrawal of the members from South Carolina, Dec. 24, 1860, after the secession of that state, when he went out with the others, as he had long before proclaimed he should do. He was appointed major-general of the troops of South Carolina, and afterward brigadier-general in the confederate army, took part in the battles of Blackburn's ford and Bull run, and was honorably mentioned in the report of the commanding general. Being elected a member of the confederate congress, he withdrew from military life.

BOONEVILLE, a town of Cooper co., Mo., on the Missouri river. (See Booneville, vol. iii.) A battle was fought here, June 17, 1861, between a Union force of 2,000 men, commanded by Gen. Lyon, and 4,000 confederates under Gov. Jackson. Gen. Lyon in pursuit left Jefferson City on the 16th, by the river, and disembarked his men at 7 o'clock the following morning, at a point about 4 m. below Booneville. The confederate force, consisting of Missouri militia, over whom a Mr. Little had been placed in command by the governor, was posted along the summit of a hill between Booneville and the Union troops just landed. The attack by Lyon's army was made with shells and musketry, and for a short time sharply returned. The confederates, however, in a few minutes retired, forming again in a field of wheat, and firing from this and from a grove upon their right. In about 20 minutes they again retreated before Lyon's advance, rallying once more at the distance of a mile; but being at the same time fired upon from some of the steamers which followed, at the end of an hour they threw down their arms, many being taken prisoners, and others fleeing through the town. The national force took two cannon, and a considerable quantity of small arms and stores. The loss of the confederates in killed was estimated at from 20 to 50; the Union loss was 2 killed, 3 missing, and a few wounded.

BOOTH, Edwin, an American actor, second surviving son of Junius Brutus Booth, born on his father's farm near Baltimore, Md., in 1833. He was educated for the stage, travelling with his father on his starring engagements, occasionally playing small parts, and making his first regular appearance on the stage in 1849 as Tyrrell in Richard III. In 1851, on occasion of his father's illness, he took his place, playing Richard at the Chatham theatre, New York. In 1852 he went to California, and engaged for "utility business," and in 1854 made a visit to Australia, stopping on the way at many of the Pacific islands. He returned to California, after playing a successful engagement in the Sandwich islands, and in 1857 appeared at Burton's theatre in New York. It was not, however, until Nov. 1860, when he played another engagement at the same theatre, under its new name of the Winter Garden, that he achieved that high position on the stage which he now holds. He made a professional visit to England in the summer of 1861, played at the London Haymarket, passed a year on the continent engaged in the study of his art, and returned to its practice in New York in Sept. 1862.

BORLAND, Solon, a general in the service of the confederate states, born in Virginia, was educated in North Carolina, studied medicine, and settled at Little Rock, Ark., where he practised his profession; served in the Mexican war as major of the Arkansas mounted volunteers, who were enlisted for 12 months only, and were disbanded in June, 1847. He afterward served as volunteer aide-de-camp to Gen. Worth, and was captured by the Mexicans and held for a time as a prisoner. Returning to Arkansas, he was elected a U. S. senator from that state, taking his seat at Washington on the inauguration of President Taylor, and in the senate uniformly voted with the more southern wing of the democratic party. In 1853, the year previous to the conclusion of his senatorial term, he was appointed by President Pierce minister to Central America, and entered upon the duties of that office. He remained there, however, but about a year, and in May, 1854, being at San Juan de Nicaragua on his return to the United States, the authorities of the town attempted to arrest him because he had interfered at Punta Arenas, on the opposite side of the harbor, to prevent the arrest of a man charged with murder. Mr. Borland took refuge in a hotel, and while parleying with those who were attempting to arrest him, he was struck by a glass bottle thrown by some one in the throng about the house. This insult was the principal cause for the bombardment and destruction of the town by order of the U. S. government, executed by Commander Hollins of the sloop of war Cyane, July 13, 1854. Mr. Borland was afterward appointed by President Pierce governor of New Mexico, but declined, and remained at Little Rock, engaged chiefly in the practice of his profession, but still declaring himself from time to time an adherent of the so called southern rights party, until the spring of 1861, when, long before the secession of the state, he raised a body of troops, and on April 24 took possession of Fort Smith at midnight, a part of the garrison under Capt. Sturgis, U. S. A., having made their escape an hour before. He now holds the rank of brigadier-general in the provisional confederate army.

BOWLING GREEN, a village of S. W. Kentucky, on the Louisville and Nashville railroad, and at the head of navigation on Barren river, 145 m. S. W. from Frankfort, which in the existing civil war has been a point of much strategetic importance. It was occupied in Sept. 1861, by the confederate general Buckner, with a force of 10,000 men. The approaches to the town could easily be commanded with a small force, and it was considered one of the chief places in the line of posts commencing at the Mississippi river and extending through the southern part of Kentucky and the northern part of Tennessee to Cumberland gap. When Fort Henry was captured, the confederates began to leave Bowling Green, Gen. Buckner transferring the chief part of his command to Fort Donelson, whither he went soon after the fall of Fort Henry. On Feb. 10, Gen. O. M. Mitchel's division left Bacon creek, Ky., and made a forced march to Bowling Green, hoping to save the railroad bridges over the Barren river. On the 15th they arrived on the bank of the river, opposite the town, and prepared to cross it, a battery meanwhile shelling the position of the confederates. The bridges over the river were, however, entirely destroyed, and the last of the confederate troops were retiring from their camp. They had not expected the arrival of the Union army so soon, and were carrying off their movable property when they were surprised; they at once set fire to all they were compelled to leave behind, and thus immense quantities of grain and other provisions were lost, beside the warehouses containing them. Nevertheless the Union troops captured a very large amount of property, and secured the important position.

BOYD, Andrew Kennedy Hutchison, a Scottish clergyman and essayist, born at Auchinleck, Ayrshire, in Nov. 1825. His father was the clergyman of the parish. The son was educated at the university of Glasgow, became a minister of the established church of Scotland in 1851, and was settled successively over the parishes of Newton-on-Ayr, Kirkpatrick-Irongray in Galloway, and St. Bernard's, Edinburgh. He first became known as an author by a series of essays published in "Fraser's Magazine," a collection of which were reprinted in 1860 under the title of "Recreations of a Country Parson." This volume was followed by a second series of essays under the same title in 1861; "Leisure Hours in Town" (1862); and "Graver Thoughts of a Country Parson" (1863).

BOYLE, Jeremiah Tilford, brigadier-general of volunteers in the U. S. army, born in Mercer co., Ky., in May, 1818. He was graduated at Princeton college, N. J., in 1840, and was soon after admitted to the Kentucky bar, at which he practised until the outbreak of the civil war in 1861. Although noted for his avoidance of political life, he now entered the field as a supporter of the government, and was one of the first men in Kentucky who publicly advocated the policy of coercing the seceding states. In Nov. 1861, he was commissioned a brigadier-general of volunteers, and placed in command of a brigade raised by himself. After wintering with his command in southern Tennessee, he joined the army under Buell in Feb. 1862, and participated in the battle of Shiloh in the succeeding April. He was soon after appointed to the command of the military district of Kentucky, and on Nov. 17 was placed over the newly created district of western Kentucky, in the department of the Ohio, under Gen. Wright.

BRAGG, Braxton, a general in the confederate service, born in Warren co., N. C., about 1815, was graduated at West Point in 1837 and appointed a 2d lieutenant in the 3d artillery. In Nov. 1837, he became an assistant commissary of subsistence; in December was adjutant of his regiment; in July, 1838, was made a 1st lieutenant; distinguished himself in the defence of Fort Brown, opposite Matamoras, May 9, 1846, for which he was brevetted a captain, which rank he attained in full in June; fought gallantly at Monterey in September, and was brevetted a major; and again at Buena Vista, Feb. 23, 1847, and was brevetted a lieutenant-colonel; was appointed major of the 1st cavalry, March 3, 1855, but declined, and resigned from the service, Jan. 3, 1856. Henceforth he lived on his extensive plantation at Thibodeaux, La., until the breaking out of the civil war in 1861, when he was appointed a brigadier-general, and took command of the forces at Pensacola destined to reduce Fort Pickens. He remained there until Feb. 1862, when he was promoted to be a major-general, ordered to join the army of the Mississippi, and, at the head of a powerful body of troops drawn from Pensacola and Mobile, took up his head-quarters at Jackson, Tenn., March 10. He bore an important part in the battle of Shiloh, was promoted to the rank of general in place of Gen. A. S. Johnston killed in that battle, and after the withdrawal of Gen. Beauregard from the command of the department in May succeeded him in that post. In August he left his encampment at Chattanooga, successfully turned Gen. Buell's left flank, and passing through eastern Tennessee, entered Kentucky at the head of a large army. But Buell, leaving his posts in Alabama, and marching on a much shorter line, succeeded in reaching Louisville before him, and Bragg was compelled to retire, having fought the battle of Perryville, Oct. 9, with a part of Buell's army under Major-Gen. McCook. He carried away a vast amount of supplies from Kentucky, and many recruits for the confederate service. He was removed from his command, and placed under arrest in Richmond, but soon restored, and now (Nov. 1862) commands the confederate army opposed to Gen. Rosecrans.

BRANCH, Lawrence O'Brien, a general in the service of the confederate states, born in Halifax co., N. C., in 1820, killed at the battle of Antietam, Sept. 17, 1862. He was a son of Gov. John Branch, who was President Jackson's first secretary of the navy. He was graduated in Princeton college in 1838, studied law, was admitted to the bar, settled at Raleigh, was elected as a democrat a representative in congress in 1854, and was reëlected in 1856. He voted in congress for the measures of the democratic party, including the bill admitting Kansas under the Lecompton constitution in 1858. Together with other representatives of North Carolina, he retained his seat in congress until the inauguration of President Lincoln, March 4, 1861. After the secession of that state, May 21, he entered its military service, and was afterward attached to the provisional confederate army, in which he attained the rank of brigadier-general. He commanded the confederate forces at Newbern when it was captured by Gen. Burnside.

BRANNAN, John Milton, brigadier-general of volunteers in the U. S. army, born in the District of Columbia about 1821, was graduated at West Point in 1841 and appointed a brevet 2d lieutenant in the 1st artillery; became a 1st lieutenant in March, 1847; distinguished himself in the battle of Cerro Gordo; was brevetted a captain for gallantry at Contreras and Churubusco; was severely wounded in the attack on the Belen gate of Mexico, Sept. 13, 1847; became a captain in Nov. 1854; was appointed a brigadier-general of volunteers, Sept. 28, 1861, and has since served in the department of the South, having for a time had command of southern Florida. Transferred to South Carolina, he commanded, Oct. 22, 1862, a movement from Hilton Head to reconnoitre the Broad river and its tributaries, in the course of which he engaged a considerable force of the confederates and drove them across the Pocotaligo river, with severe loss on both sides.

BRAYMAN, Mason, brigadier-general of volunteers in the U. S. army, born in Buffalo, N. Y., May 23, 1813. His early life was spent on a farm. He began the trade of a printer in the office of the "Buffalo Journal," at the age of 22 was admitted to the bar, and in 1837 removed to the West, and became editor of the Louisville (Ky.) "Advertiser." In 1842 he opened a law office at Springfield, Ill.; in 1845 revised the statutes of Illinois; and the next year was appointed a special commissioner and attorney to prosecute offenders and restore the peace of that portion of the state disturbed by the Mormon difficulties. He was subsequently actively engaged in railroad enterprises until 1861, when he became major of the 29th Illinois volunteers, of which regiment he was promoted to be colonel in April, 1862. He had meanwhile been chief of staff and assistant adjutant-general to Gen. McClernand, and participated in the battles of Belmont, Fort Donelson, and Shiloh. He was appointed brigadier-general of volunteers Sept. 25, 1862.

BRIGGS, Henry Shaw, brigadier-general of volunteers in the U. S. army, born at Lanes-borough, Berkshire co., Mass., Aug. 1, 1824. He was graduated at Williams college in 1844, studied law at Cambridge, was admitted to the bar in 1848, and practised his profession at Pittsfield until 1861. He was then captain of a militia company, which joined the 8th regiment of Massachusetts volunteers, and left Boston April 18, 1861, to march to the defence of Washington. On reaching Annapolis his company was detached to secure the frigate Constitution, used by the naval school. Before the expiration of the three months' service he received a commission as colonel, and in June, 1861, took command of the 10th Massachusetts volunteers, in the army of the Potomac. He was wounded at the battle of Fair Oaks, and was promoted to be brigadier-general of volunteers, July 17, 1862.

BRIGHT, Jesse D., an American senator, born at Norwich, Chenango co., N. Y., Dec. 18, 1812. He removed to Indiana, where he practised law and was appointed circuit judge. He was subsequently U. S. marshal for the district of Indiana, state senator, and lieutenant-governor. In 1845 he became a senator of the United States, and remained in that office two successive terms, till 1857. In that year the democratic members of the state legislature reëlected him to the senate in a manner which was denounced as fraudulent and unconstitutional by his republican opponents, and his seat was contested. He nevertheless continued to hold it till Feb. 1862, when, on a charge of disloyalty, the principal proof of which was that on March 1, 1861, he wrote a letter addressed to "Hon. Jefferson Davis, President of the Confederate States," recommending to him a person desirous of furnishing arms, he was expelled by a vote of 32 to 14.

BROOKS, William T. H., brigadier-general of volunteers in the U. S. army, born in Ohio about 1815, was graduated at West Point in 1841, and was appointed a brevet 2d lieutenant in the 3d infantry; became a 1st lieutenant in Sept. 1846; was brevetted a captain for gallantry at Monterey; was assistant adjutant-general to Gen. Twiggs in the valley of Mexico; was brevetted a major for gallantry at Contreras and Churubusco; became a captain in Nov. 1851; distinguished himself in a battle with Indians in New Mexico, Oct. 10, 1858; and was promoted to be a major in the 18th infantry, March 12, 1862, having been made a brigadier-general of volunteers, Sept. 28, 1861. He has served in the army of the Potomac in the corps of Gen. Franklin, took part in the battles before Richmond, and at the battle of Antietam led his brigade in the division of Gen. W. F. Smith.

BROWN, Harvey, brevet brigadier-general in the U. S. army, born in Rahway, N. J., in 1795. He was graduated at West Point in 1818, and commissioned a 2d lieutenant of light artillery. In 1821 he was transferred to the 4th artillery and promoted to be 1st lieutenant. He was ordered to Florida immediately after its cession by the Spaniards, and remained there until 1824, when he was appointed aide-de-camp to Maj. Gen. Brown. In 1826 he was made assistant quartermaster. In 1832 he was sent against the Indians in the Black Hawk war, was in active service during the Florida war, and in the Creek war in 1835, when he was promoted to be captain. He was lieutenant-colonel of a regiment of Creek volunteers in the war against the Seminoles in 1836-'7, and was brevetted major in 1836; served under Gen. Taylor and Gen. Scott in Mexico, taking part in the battle of Monterey and subsequent engagements; was brevetted lieutenant-colonel for gallantry at the battles of Contreras and Churubusco, and colonel for services at the capture of the city of Mexico; became major of the 2d artillery in 1851, and commanded against the Seminoles in Florida in 1855-'6. In 1857 he was selected to establish an artillery school at Fortress Monroe, and continued in command of the school and that post until 1859, when Secretary Floyd appointed him inspector of artillery for the eastern department and Texas. In Jan. 1861, he was ordered to command the troops in the city of Washington and Fort McHenry, and in April appointed to the department of Florida, and ordered to fit out and command an expedition for the relief of Fort Pickens, in which he was entirely successful. He was made colonel of the 5th artillery in April, 1861, and brigadier-general of volunteers in October of the same year; this last appointment he declined. He was brevetted brigadier-general in the regular army, to date from Nov. 23, 1861, and in 1862 was assigned to the command of the forts in the harbor of New York. He was appointed chief of artillery of the camp of instruction at Annapolis in June, 1862.

BROWNLOW, William Gannaway, an American clergyman and journalist, born in Wythe co., Va., Aug. 29, 1805. He became an orphan at 11 years of age, was employed at hard labor till he was 18, and then learned the trade of a carpenter, at which he worked till he acquired the means of repairing the defects of his early education. Entering the Methodist ministry in 1826, he was an itinerant preacher for 10 years, and in 1832 was a delegate to the general conference held in Philadelphia. In the same year he travelled a circuit in South Carolina in which John C. Calhoun resided, and where Mr. Brownlow was drawn into the nullification controversy, taking sides strongly in favor of the Union, and publishing a pamphlet in his own vindication in consequence of the fierce opposition excited against him. In a controversy at the same period with a clergyman of another denomination upon the position of the Methodists with regard to slavery, he published a pamphlet, the following prophetic extract from which expresses the sentiments he has ever since maintained: "I have paid some attention to this subject, young as I am, because it is one day or other to shake this government to its very foundation. I expect to live to see that day, and not to be an old man at that. The tariff question now threatens the overthrow of the government, but the slavery question is one to be dreaded. While I shall advocate the owning of 'men, women, and children,' as you say our 'Discipline' styles slaves, I shall, if I am living when the battle comes, stand by my government and the Union formed by our fathers, as Mr. Wesley stood by the British government, of which he was a loyal subject." Mr. Brownlow commenced his political career in Tennessee in 1828 as an advocate of the election of John Quincy Adams to the presidency, having always been, as he says, "a federal whig of the Washington and Alexander Hamilton school." About 1837 he became editor of the "Knoxville (Tenn.) Whig," a political newspaper, which attained a large circulation; and from the vigorous and defiant style of his articles in this and of his public speeches he obtained a national reputation under the *sobriquet* of the "fighting parson." In 1858 he held a public debate at Philadelphia, with the Rev. A. Pryne of New York, on slavery, which was afterward published in a volume entitled "Ought American Slavery to be Perpetuated?" (12mo., Philadelphia), Mr. Brownlow maintaining the affirmative. From the commencement of the secession movement in 1860, he boldly maintained in his journal the principle of unconditional adherence to the Union, for the reason, among others, that it was the best safeguard of southern institutions. This course subjected him to much persecution after the secession of Tennessee. On Oct. 24, 1861, he published the last number of the "Whig," and after remaining for some time in concealment he was induced by a promise of passports and a military escort out of the state to report himself to the confederate general commanding at Knoxville, when he was arrested (Dec. 6) on a civil process for treason, and thrown into gaol. Here he was detained, expecting the punishment of death, and suffering from severe illness, till the close of the month, when he was released upon the civil process, but immediately rearrested under military authority, and kept under guard in his own house till March 3, 1862. He was then released and forwarded with an escort toward the Union lines at Nashville, which he finally entered on the 15th, having been detained 10 days by the guerilla force of Col. Morgan. He afterward made a tour of the northern states, delivering speeches to large crowds in the principal cities, was joined by his family, who had also been expelled from Knoxville, and published a work entitled "Sketches of the Rise, Progress, and Decline of Secession, with a Narrative of Personal Adventures among the Rebels" (12mo., Philadelphia, 1862). Mr. Brownlow is now (Nov. 1862) residing with his family in Cincinnati. He has expressed decided approbation of the emancipation proclamation of President Lincoln as a war measure. Beside the above mentioned work, he has published several others, the principal of which is "The Iron Wheel Examined, and its False Spokes Extracted" (12mo., Nashville), a reply to certain attacks upon the Methodist church.

BRUCE, ARCHIBALD, M.D., an American physician and mineralogist, born in New York, where his father was surgeon-general of the British army, in Feb. 1777, died there, Feb. 22, 1818. He was graduated at Columbia college in 1795, studied medicine under Dr. Hosack, spent 5 years in Europe, obtained his medical degree at Edinburgh (1800), and returned to New York in 1803. In 1807 he was appointed professor of materia medica and mineralogy in the college of physicians and surgeons of New York, which chair he filled till 1811, when the college was reorganized, and he with several of the other professors were superseded and formed a new medical faculty. In 1810 he commenced the publication of a journal of American mineralogy, the first purely scientific journal published in this country, but issued only one volume.

BUCHANAN, FRANKLIN, an officer of the navy of the confederate states, born in Baltimore, Md., entered the U. S. navy in 1815. He was the first superintendent of the U. S. naval academy (1845–'7), became captain in 1855, and was afterward employed on shore duty of various kinds until 1861, when he was commandant of the Washington navy yard. On April 19, the day when the Massachusetts volunteers were attacked in the streets of Baltimore, he sent in his resignation and hastened to his farm on the eastern shore of Maryland; but finding that his native state did not secede, he petitioned to be restored. His request being refused, he entered the service of the confederate states, and was employed to superintend the fitting out of the frigate Merrimac. He commanded this vessel in her attack upon the federal fleet in Hampton roads, and was wounded by a musket ball during the first day's engagement so severely that he was obliged to relinquish his command. Resuming his post when the vessel was repaired after her conflict with the Monitor, he was in command at the time of the occupation of Norfolk by Gen. Wool, and blew up his vessel to save her from capture. His conduct was investigated by a court martial, which resulted in his favor.

BUCKINGHAM, CATHARINUS PUTNAM, brigadier-general of volunteers in the U. S. army, born at Putnam on the Muskingum river, Ohio, March 12, 1808. He was graduated at West Point in 1829, became 2d lieutenant in the 3d artillery, and was assistant professor of natural and experimental philosophy in the military academy from Oct. 1830, to Aug. 1831. He resigned his commission in Sept. 1831, and from 1833 to 1836 was professor of mathematics and natural philosophy in Kenyon college, Ohio. He then established iron works at Mount Vernon, O. On the outbreak of the civil war in 1861 he was appointed adjutant-general of

Ohio, and retained that office until July, 1862, when he was commissioned brigadier-general of volunteers and appointed assistant adjutant-general of the United States.

BUCKNER, Simon Bolivar, a general in the confederate service, born in Kentucky about 1824, was graduated at West Point in 1844, becoming a brevet 2d lieutenant in the 2d infantry; from Aug. 1845, to May, 1846, was acting assistant professor of ethics at West Point; was attached to the 6th infantry, and brevetted as 1st lieutenant for gallantry at Contreras and Churubusco, where he was wounded, and as captain for gallantry at Molino del Rey; became assistant instructor in infantry tactics at West Point in Aug. 1848, and commissary of subsistence in Nov. 1852; and resigned March 25, 1855. After the breaking out of the civil war in 1861, he was appointed commander of the state guard of Kentucky, and as such took an oath to observe and maintain its constitution and laws. He also visited Washington, professing himself loyal to the government of the United States; but within a few months he formally embraced the confederate cause, and on Sept. 12, 1861, issued from Russellville an address to the people of Kentucky calling on them to take up arms against the usurpations of Abraham Lincoln; after which he removed to Bowling Green, and thence on Sept. 18 issued a proclamation stating that he occupied that point as a defensive position. After the capture of Fort Henry he evacuated Bowling Green, withdrawing to Fort Donelson, where he commanded a brigade in the battles of Feb. 13, 14, and 15; and, after the escape of Pillow and Floyd, he surrendered the fort on Feb. 16 to Gen. Grant, with 16,000 prisoners and vast stores. He was carried to Boston as a prisoner of war, and held in Fort Warren until the general exchange of prisoners in August. The authorities and people of Kentucky insisted on his being retained as specially guilty of treason, for which crime he had been indicted in that state; but the general government declined to make an exception of him, and exchanged him with others. Though greatly blamed in the South for surrendering Fort Donelson, he escaped the official disgrace inflicted on Floyd and Pillow, and after his release commanded the 1st division of Gen. Hardee's corps in Bragg's army in Tennessee. Later he was promoted to be a major-general in the confederate army, and assigned to the 3d grand division.

BUELL, Don Carlos, major-general of volunteers in the U. S. army, born in Ohio about 1818, was graduated at West Point in 1841, and appointed a 2d lieutenant in the 3d infantry. He was promoted to be 1st lieutenant in June, 1846, accompanied his regiment to Mexico, and on Sept. 23 was brevetted captain for gallantry at Monterey. His regiment having joined the army under Gen. Scott, he distinguished himself at Contreras and Churubusco, was severely wounded in the latter action, and was brevetted major. He became assistant adjutant-general, with the rank of captain, in Jan. 1848, relinquished his rank in the line in March, 1851, was employed in the duties of his office in various parts of the country, and after the commencement of hostilities in 1861 assisted in organizing the army at Washington. In August he was appointed brigadier-general of volunteers, and assigned to a division in the army of the Potomac, which soon became distinguished for thorough discipline; and in November he superseded Gen. W. T. Sherman in command of the department of the Cumberland, which was reorganized as that of the Ohio, his head-quarters being at Louisville, Ky. On Dec. 17 a portion of his forces gained a victory at Munfordsville, Ky.; and in Feb. 1862, after the capture of Fort Henry, his advance under Gen. Mitchel marched upon the confederate stronghold at Bowling Green, which was hastily evacuated. On March 21 Gen. Buell was promoted to be major-general of volunteers, and on the same day his department was incorporated with that of the Mississippi under Gen. Halleck. He appeared with a part of one division on the battle field of Shiloh near the close of the first day's action, April 6, in time to succor the hard-pressed army of Gen. Grant. Three of his divisions having come up on the following day, the confederates were driven back toward their intrenchments at Corinth. By order of Gen. Halleck, dated June 12, he took command of the new district of Ohio, comprising the states of Kentucky and Tennessee east of the Tennessee river, and so much of northern Alabama and Georgia as might be held by the national troops; and he occupied and fortified posts extending E. and W. from Iuka, Miss., to Bridgeport, Ala., about 150 m. (a line which had previously been secured by a portion of his forces under Gen. Mitchel), and N. and S. from Nashville, Tenn., to Decatur, Ala., nearly the same distance, with his head-quarters at Stevenson or at Huntsville, Ala. The confederates under Gen. Bragg anticipated Gen. Buell's intended seizure of Chattanooga, Tenn., about 50 m. from Stevenson, which they occupied in strong force, and whence they threw large bodies into East Tennessee. In the latter part of August Bragg, masking his movements, evacuated Chattanooga and marched northward with his main force. Meantime Murfreesborough, Tenn., 30 m. from Nashville, was captured on July 12 by the confederates, who made prisoners of most of the troops and of Gen. T. T. Crittenden and other officers stationed there. On the 22d they attacked Florence, Ala., capturing a Union detachment and destroying an immense quantity of army stores and other property; which operations they continued with equal success at several other points. On Aug. 21 they captured 700 Union soldiers at Gallatin, Tenn., with Gen. Johnson, their commander; and on the 29th they inflicted a severe defeat on a force under Gens. Manson and Nelson, near Richmond, Ky., compelling the abandonment of Lexington and Frankfort, and the removal of the state archives to Louisville.

The advance of Gen. Bragg, under Gen. E. Kirby Smith, had before this time penetrated into Kentucky, and now threatened Louisville and Cincinnati. Tennessee and Kentucky were also overrun with confederate guerillas, who inflicted great suffering upon the Unionists. On Aug. 23 Gen. Buell's troops commenced evacuating their posts to follow Bragg on a shorter line of march. On Sept. 14 his advance division occupied Bowling Green, Ky., while Bragg was encamped at Glasgow, 30 m. east. On the same day the Union troops at Munfordsville, 40 N. from Bowling Green, were attacked by the confederates; and the attack being renewed with augmented force on the 16th, the place was captured with over 4,000 prisoners. It was reoccupied on the 21st, and at midnight of the 24th Gen. Buell entered Louisville, which had been for some time held by a hastily collected force under Gen. Nelson, and where intense excitement had existed lest Bragg should reach it first. On Sept. 30, by order from Washington, Gen. Buell turned over his command to Gen. Thomas; but on the same day, at the urgent request of the latter, and of other generals, he was restored, and on Oct. 1 commenced the pursuit of the confederates, then somewhat scattered, but chiefly encamped at Bardstown, 40 m. S., while most of their generals were engaged at Frankfort in inaugurating a provisional confederate state government. On the 8th, the confederates having retreated to Perryville, a severe but undecisive battle was fought with them there by a portion of Buell's army. On the 18th Lexington, which had been reoccupied, was again captured by 1,000 confederate cavalry, but immediately abandoned. On the 22d Gen. Bragg, by slow marches, had reached Cumberland gap, lately evacuated by the Union force under Gen. Morgan that had held it for many months, and Gen. Buell had ceased his pursuit. On the 24th the latter was ordered to transfer his command to Gen. Rosecrans, and to report himself at Indianapolis, which he did on the 30th; and a court of inquiry to investigate his operations in Kentucky assembled at Cincinnati early in December, and after two days' session adjourned to Nashville.

BUFORD, Abraham, a general in the service of the confederate states, born in Kentucky, was graduated at West Point in 1841, assigned to the 1st dragoons, promoted to be 1st lieutenant in 1846, and brevetted captain for gallantry at Buena Vista. He was secretary and treasurer of the military asylum at Harrodsburg, Ky., from May, 1853, to April, 1854. In July, 1853, he became captain, and in Oct. 1854, he resigned his commission. Entering the service of the confederate states in 1861, he was appointed brigadier-general.

BUFORD, John, brigadier-general of volunteers in the U. S. army, born in Kentucky about 1829. He was graduated at West Point in 1848, and appointed a brevet 2d lieutenant in the 1st dragoons, a 2d lieutenant in the 2d dragoons in Feb. 1849, 1st lieutenant in July, 1853, regimental quartermaster in May, 1855, and captain in March, 1859; served in the Utah expedition; was made an inspector-general with the rank of major, Nov. 12, 1861; was attached to the staff of Gen. Pope on his assuming command of the army of Virginia, June 26, 1862; and on July 27 was appointed by the president a brigadier-general of volunteers and assigned to Gen. Banks's command. He is now (Dec. 1862) chief of cavalry under Gen. Burnside.

BUFORD, Napoleon Bonaparte, brigadier-general of volunteers in the U. S. army, half brother of the preceding, born in Woodford co., Ky., Jan. 13, 1807. He was graduated at West Point in 1827, entering the 3d artillery, and soon afterward, at the request of the governor of Kentucky, was detailed to make the first surveys of the Kentucky river, which led to its being converted into a canal by a system of locks and dams. He was next employed in making a survey of the Des Moines and Rock Island rapids of the Mississippi river. In 1830 he joined his regiment at Eastport, Me., and employed his leisure in studying law. The year following he was granted leave of absence, that he might enter the law school of Harvard university. In 1833 he was appointed an assistant professor of natural and experimental philosophy at West Point. In 1835 he resigned his commission, and was engaged in the public improvements of Kentucky until 1842. During most of this time he was the resident engineer of the Licking river slack water navigation company. In 1843 he removed from Cincinnati to Rock Island, Ill., his present residence, where he engaged in business successively as a merchant, iron founder, and banker. He was commissioned colonel of the 27th Illinois volunteers in Aug. 1861, at the request of Flag Officer Foote was given command of the troops that accompanied the gunboat flotilla to Columbus and Island No. Ten, captured Union City, March 30, 1862, and was appointed brigadier-general of volunteers April 15. He was subsequently ordered to the East, and in the latter part of July succeeded Gen. Hatch in command of a cavalry brigade under Gen. Banks. In November he was appointed a member of the court martial for the trial of Gen. Fitz John Porter.

BULL RUN, a small stream in N. E. Virginia, which flows into the Occoquan creek, an affluent of the Potomac, about 20 m. S. W. from Washington, and gives the name to two severe battles fought between the United States and confederate forces, on July 21, 1861, and Aug. 29 and 30, 1862.—On July 16, 1861, the Union forces under Gen. McDowell stationed in front of Washington took up the line of march for Manassas Junction, on the Alexandria and Orange railroad, about 25 m. W. S. W. from Washington, where the confederate troops had concentrated in force in a position of great natural strength, protected by heavy earthworks, and, on account of the broken and wooded character of the surrounding country, difficult of approach.

At the same time Gen. Patterson, who was in command of about 15,000 Union troops at Martinsburg, Va., was directed to watch the confederate Gen. Johnston at Winchester, and prevent him from uniting his forces with the main body at Manassas. McDowell's army numbered about 35,000 men, all of whom, with the exception of a battalion of 700 or 800 regulars of the old army, were raw troops comprising regiments of volunteers and uniformed militia and a few marines. The greater part had never been under fire, and having been hastily brigaded were unaccustomed to manœuvring in large bodies. Division and brigade commanders and troops were alike unacquainted with each other and unfamiliar with their duties. By far the best disciplined regiments were within but a few days of the expiration of their term of enlistment, but were sent forward "as having long enough to serve for the purpose of the expedition." Accompanying this force were 55 pieces of artillery and an immense train. On the 17th Fairfax Court House was occupied, the confederate force retreating with precipitation at the approach of the Union troops, who bivouacked there for the night. At this point McDowell had intended to make a sudden movement to the left, and, crossing the Occoquan just below its junction with Bull run, aim at the confederate railroad communications. But a reconnoissance in that direction showing the country to be impracticable for military operations, he directed his march on the morning of the 18th to Centreville, a village about 7 m. N. E. from Manassas Junction, and separated from it by the rivulet called Bull run, which flows midway between the two places in a south-easterly direction. From Centreville a road runs along an elevated ridge to the junction, crossing Bull run at Blackburn's ford (called by the confederates Mitchell's ford); and another road, the Warrenton turnpike, having a westerly course, crosses Bull run at the "stone bridge," 4 m. distant from Centreville, and between 3 and 4 m. above Blackburn's ford. The advance under Gen. Tyler entered Centreville at noon, and a brigade was immediately pushed forward to Blackburn's ford to feel the enemy, who were found to be in strong force on the opposite bank. After a brief engagement the Union forces retired with a loss of about 100. During the next two days the stream was carefully reconnoitred for several miles, and the fords between Blackburn's ford and the stone bridge found to be impracticable from the steepness of the opposite banks. The bridge itself was guarded by batteries, and the road and the adjacent ground beyond obstructed by formidable abatis; but 2 m. further up there was a good ford at Sudley spring, which was but slightly guarded, and above that point the stream was almost everywhere passable. Under these circumstances McDowell devised the following plan of attack. One of the 5 divisions of his army, under Col. Miles, was ordered to remain in reserve at Centreville, a single brigade under Col. Richardson making a feigned attack on Blackburn's ford, while the division of Gen. Tyler was to move along the Warrenton turnpike and threaten the stone bridge. While the confederate troops were thus occupied at these points, the divisions of Cols. Hunter and Heintzelman, constituting the principal column of attack, were to march up Bull run to Sudley spring, cross there or in the immediate neighborhood, and, having turned the enemy's left flank, descend the right bank of the stream to the stone bridge. At this point Tyler was ordered to cross the stream and form a junction with Hunter and Heintzelman, when the united force would be prepared to give battle or to strike at the confederate railroad communications. The remaining division of the Union army, under Gen. Runyon, had been left at Fairfax Court House to protect McDowell's communications with Washington, and its nearest regiment was 7 m. distant from Centreville. The troops that were to take part in the action were ordered to leave their encampments at Centreville at 2 A. M. on the 21st, which it was supposed would enable the attacking column to reach Sudley spring at 6 or 7 A. M. But the men, unaccustomed to prompt military movements and unable to appreciate the value of time in making them, could not be moved at the hour indicated, and it was not until 6 o'clock that Tyler's division had cleared the Warrenton turnpike, along which it marched to the stone bridge, sufficiently to allow the troops of Hunter and Heintzelman following in its rear to take the road diverging toward Sudley spring. The route through fields and woods to the latter place was also found to be longer and more difficult than had been supposed, so that the head of the column only reached the ford at 9½ A. M., 3 or 4 hours behind time. More valuable time was here lost by the slowness of the troops in crossing the stream; and as the leading brigade under Col. Burnside, marching down the right bank toward the stone bridge, emerged at about 11 o'clock upon a rolling plain, interspersed with woods which skirted the Warrenton turnpike, it came suddenly upon the enemy well posted and in superior force, and was obliged for a short time to sustain their attack without support. The confederate forces, under Gens. Joseph E. Johnston and Beauregard, had in the early part of the day been distributed along Bull run from Union mill, 2 m. below Blackburn's ford, to the stone bridge; but, perceiving the plan of McDowell's attack, they were enabled, through the tardiness of his movements, to strengthen their left wing by marching up troops from below and from their works at Manassas Junction. Col. Heintzelman's division, which immediately followed Hunter's, was to have forded the stream just below Sudley spring, and taken its position between the stream and Hunter; but no available diverging road to the stream presenting itself, he was obliged to keep on to Sudley spring, where he crossed between 11 and 12 o'clock. Thus the head of the flanking column did not reach the field until several hours after the time fixed upon, and the complete junction of Hunter and Heintzelman was not effected until after midday. While Burnside's brigade was engaged with the enemy in front, the other brigade of Hunter's division, under Col. Andrew Porter, came up and took position on the right, soon after which the action became general, the enemy at this time being extended along the Warrenton turnpike from a house near the stone bridge to a house and haystack about a mile distant. The Union line advanced steadily toward the Warrenton road, and Burnside, aided by a battalion of regulars from Porter's brigade and other troops, drove the confederate right back far enough to permit the brigades of Sherman and Keyes of Tyler's division, which had been all this time in position in front of the stone bridge, to cross Bull run a short distance above that structure and support the attacking column, now, in consequence of Hunter being disabled by a wound, under the command of Col. Porter. Gradually the whole confederate line retreated across the Warrenton turnpike and up the slopes on the other side toward a hill with a farm house on it, from which several batteries played with effect upon the advancing columns. The latter, now further strengthened by the arrival of Heintzelman's division, were at once directed against this hill, the contest for the possession of which was the hottest of the day. Ricketts's and Griffin's batteries of the regular army soon became the objects of the special attention of the enemy, and the former, after reaching the top of the hill, was 3 times taken by the confederates, the horses being all killed or disabled, and as often retaken by the Union troops. At the 3d recapture the confederates were driven so far beyond the hill as not to be in sight, having been pushed a mile and a half beyond their original position. The Warrenton turnpike westward from the stone bridge was thus left in the possession of the Union forces. The brigade of Keyes had meanwhile conducted a successful flank movement upon the confederate right, and the engineers were just completing the removal of the abatis in front of the stone bridge in order to allow the remaining brigade (Schenck's) of Tyler's division to cross the stream and take part in the battle. It was now about 3½ P. M., and the Union troops, though victorious in every part of the field, were exhausted by long marching, long fasting, and hard fighting. "The men had been up," says Gen. McDowell in his official report, "since 2 o'clock in the morning, and had made what to those unused to such things seemed a long march before coming into action, though the longest distance gone over was not more than 9½ miles; and though they had 3 days' provisions served out to them the day before, many, no doubt, either did not eat them, or threw them away on the march or during the battle, and were therefore without food. They had done much severe fighting. Some of the regiments which had been driven from the hill in the first two attempts of the enemy to take possession of it had become shaken, were unsteady, and had many men out of the ranks." At this moment, when victory seemed to rest with the Union army, they were assailed on their right flank by a heavy fire of musketry from a body of 3,000 fresh troops of Gen. Johnston's army of the Shenandoah, just arrived by railroad from Winchester, whence they had departed under the very eye of Gen. Patterson, who had orders to prevent their junction with Beauregard. The effect upon the tired Union troops was disastrous. Regiment after regiment broke and retired in disorder down the hillside, defying the efforts of their officers to rally them, even when beyond the reach of the enemy's fire, and swarming in a hurried and confused mass across the Warrenton turnpike toward the fords they had crossed in the morning, the passage of the stone bridge being menaced by the confederate artillery. The battalion of regulars alone preserved order, and afforded some degree of protection to the fugitives. On the other side of Bull run the confusion, far from decreasing as the troops approached the reserves at Centreville, was heightened by the precipitancy with which the teamsters and stragglers sought to make good their escape. Even Keyes's brigade, which had recrossed the stream in good order, and Howard's, which was the last of Heintzelman's division to arrive upon the field and had preserved its formation, became infected with the general alarm. In the words of Gen. McDowell, "the retreat soon became a rout, and this soon degenerated still further into a panic." Fortunately for the retreating army, the enemy, exhausted and broken by the long conflict, were in no condition to pursue in force. The few squadrons of cavalry and pieces of artillery which harassed the rear of the Unionists contributed so powerfully toward the demoralization already commenced, that an energetic pursuit must have resulted in the total destruction of the greater part of McDowell's troops. The brigades of Schenck and Richardson, which had never crossed Bull run, and the "apparent firmness," as Gen. Johnston calls it, of the Union reserve under Col. Miles at Centreville, proved sufficient to deter the enemy from any systematic advance, and checked pursuit. At nightfall the army had taken refuge within the lines of Centreville, and several regiments returned to their previous camping grounds, though a steady stream of fugitives pressed on toward Washington, many scarcely stopping for rest until they reached that city. After a few hours' repose the retreat was continued, and by the evening of the 23d the fortifications of Washington protected the army which but a week previous had so proudly and confidently marched forth from them. The enemy followed on its traces, and established their pickets within a few miles of the city. The forces of

McDowell at Centreville on the night of the 20th were reduced to about 28,000 effective men by the departure of the 4th Pennsylvania volunteers and the battery of the 8th New York militia regiment, which on the eve of the battle claimed their discharge, and, indifferent to the appeals of the commander-in-chief, "moved to the rear," as he expressed it, "to the sound of the enemy's cannon." Of this force one division remained in reserve at Blackburn's ford and Centreville, and one brigade (Schenck's) at the stone bridge; and the whole number who crossed Bull run and engaged in the main battle amounted to 18,000 men, with 24 pieces of cannon. Of these not more than 13,000, with the batteries of Ricketts and Griffin, were in action together during the hottest part of the fight. The confederate strength on the 20th, according to Gen. Beauregard, comprised 12 brigades, beside 42 field pieces and cavalry; and the arrival of the reënforcements from Winchester on the afternoon of the 21st, which decided the fate of the day, made their whole available strength in the battle not less probably than 30,000 men. The Union loss, according to the official returns, was 481 killed, 1,011 wounded, and 1,216 missing, beside which 23 guns and an immense amount of material of war were abandoned to the enemy or captured by them. The batteries of Ricketts and Griffin were captured on the hill beyond Bull run at the commencement of the retreat, but all the other pieces lost were necessarily left behind by the breaking down of a bridge over Cub run, a small tributary of Bull run near Centreville, and by other casualties occurring on the line of retreat. So inefficient was the pursuit, that 6 of the abandoned pieces were recovered on the day after the battle by Col. Einstein of the 27th Pennsylvania volunteers. The confederate loss, as stated by Gen. Johnston, was 378 killed, 1,489 wounded, and 30 missing. Among the Union loss were Col. Cameron of the 79th New York volunteers (highlanders) killed, and Cols. Corcoran and Willcox, and Capt. Ricketts, of Ricketts's battery, taken prisoners. On the confederate side Gen. Bee, of South Carolina, was killed. In his official report Gen. McDowell, after stating that the advance from Washington was delayed a week beyond the appointed time, shows that by a variety of untoward circumstances he was obliged to give battle two days later than he had proposed. The enemy consequently, having notice on the 17th of the movements of the Union army, had several days to call in reënforcements. "It is known," he observes, "that in estimating the force to go against Manassas I engaged not to have to do with the enemy's forces under Johnston, then kept in check in the valley by Maj. Gen. Patterson, or those kept engaged by Maj. Gen. Butler. This was not done, and the enemy was free to assemble from every direction in numbers only limited by the amount of his railroad rolling stock and his supply of provisions." Of the conduct of the volunteers in the Union army, Col. Heintzelman remarks in his report of the battle: "Some of the regiments behaved very well, and much excuse can be made for those who fled, as few of the enemy could at any time be seen. Raw troops cannot be expected to stand long against an unseen enemy." In an elaborate narrative entitled "The C. S. A. and the Battle of Bull Run," by Gen. J. G. Barnard, who was McDowell's chief engineer during this brief campaign, the following remarks occur: "Strategically speaking, our movement failed through the loss of time already mentioned, so far as it consisted in bringing, at any time, superior numbers upon the decisive point. On the contrary, the enemy from his more central position was enabled always to maintain superiority of numbers, and by this means finally deprived us of the victory. It was a success in turning the enemy's strong defensive line, disconcerting all his arrangements, and, through the moral influence of this, and of our being the attacking party, very nearly gaining a decisive victory. We did not ignore the contingency of having to encounter superior numbers. We had heard the whistle of the locomotive and the rattling of cars during the two nights preceding the battle, and we inferred the arrival of Johnston's army. Had the plan of attack been fully executed as designed, we should unquestionably have beaten the enemy's left wing before he had time to reënforce it."—The events of the second battle of Bull run, and of the series of operations to which it formed the conclusion, though of great magnitude and importance, cannot be stated with exactness until the results of the official inquiry demanded by the U. S. general in command are made public. In the following account, therefore, nothing but a brief outline of the campaign will be attempted. After the battle of Cedar mountain (Aug. 9, 1862), Gen. Pope remained near Culpepper Court House, threatening to cross the Rapidan, until Aug. 17, when, learning that the army of Gen. McClellan had retired without molestation from Harrison's Landing down the peninsula, and that the confederate general Robert E. Lee was but 8 m. in front of him in overpowering force, he recrossed to the left bank of the Rappahannock, one day in advance of Lee's proposed movement against him, and prepared to defend the passage of the river at Rappahannock station, where the Orange and Alexandria railroad crosses, and at the numerous fords above and below that place. He was ordered to hold the line of the upper Rappahannock until McClellan's troops could arrive in front of Washington and march to his assistance. For several days there was incessant fighting along the river from Rappahannock station northward to Waterloo bridge and Warrenton sulphur springs, the attempts of the enemy to cross being in every instance frustrated. Lee was, however, gradually working round to the north along the right bank of the river, and the demonstration in front of Pope, as it afterward appeared, was intended to mask a movement by Gen. Jackson in great force toward Thoroughfare gap in the Bull Run mountains, and thence to Manassas Junction in the rear of the Union army. On the night of the 22d, while Jackson in his march to Thoroughfare gap was encamped 12 m. N. of Warrenton, a body of his cavalry under the command of Gen. Stuart made a bold dash across the country, in the midst of a terrific thunder storm, to Catlett's station in Pope's immediate rear, and plundered a valuable train, gaining possession among other things of Gen. Pope's private papers and baggage. On the succeeding day the first detachment of McClellan's army under Heintzelman reached Warrenton Junction, where on the evening of the 25th it was joined by Gen. Fitz John Porter's corps, also of McClellan's army, Pope having in the mean time fallen back upon Warrenton. Jackson proceeded northward without obstruction on the 24th and 25th, and passing through Thoroughfare gap marched directly for Centreville. On the 26th his cavalry under Col. Fitz Hugh Lee fell suddenly upon the small Union force at Manassas Junction, capturing a battery and a large amount of stores, and the works were immediately occupied by the confederates in force. A brigade of New Jersey troops from McClellan's army, under Gen. Taylor, which arrived there from Alexandria by railroad on the succeeding day, approached the junction unsuspicious of the presence of the enemy, and were driven back with heavy loss beyond Centreville. Gen. Pope has stated in his official report that this flanking march of Jackson was well known to him, and that he had relied confidently upon the presence at Manassas of a large force which he had been assured would be sent there from Alexandria. It was not until he found his communications with Washington interrupted that he was undeceived. Upon ascertaining that the enemy were in his rear, Pope decided that the upper Rappahannock was no longer tenable, the Union army being too small to admit of a force being detached to watch Jackson while the main body confronted Lee. Accordingly, on the 27th he evacuated Warrenton and Warrenton Junction, directing McDowell, with his own corps and Sigel's and the division of Reynolds, to march rapidly northward upon Gainesville, so as to intercept any reënforcements coming to Jackson through Thoroughfare gap, and instructing Reno with his command, and Kearny, commanding a division of Heintzelman's corps, to march on Greenwich, in the rear of Gainesville, for the purpose of supporting McDowell. He himself with Fitz John Porter's corps and Hooker's division marched back to Manassas Junction. Near Kettle run, on the afternoon of the 27th, Hooker came upon the confederate advance under Gen. Ewell, and after a sharp engagement drove him back with loss upon Manassas Junction; while McDowell presented so threatening a front at Gainesville that Gen. Longstreet, who had passed through Thoroughfare gap with reënforcements for Jackson, was compelled to fall back to the W. side of the Bull Run mountains. The position of Jackson becoming somewhat critical, he evacuated Manassas Junction on the morning of the 28th, and passing through Centreville took the Warrenton turnpike toward Gainesville to reach the neighborhood of his supports. Pope immediately pushed on to Manassas and Centreville with the troops of Hooker, Reno, and Kearny, sending orders to Fitz John Porter to hasten up from Broad run, where he had stopped. On the same day McDowell, leaving the division of Ricketts to watch the enemy at Thoroughfare gap, marched with the corps of Sigel and King's division along the Warrenton turnpike toward Centreville, near which place his advance under Gen. Gibbon encountered the retreating army of Jackson. A sharp skirmish ensued, which was terminated by the approach of night. At dawn of the 29th, in accordance with Gen. Pope's instructions, Heintzelman, commanding the divisions of Hooker and Kearny, with Reno, moved upon Jackson from the direction of Centreville, while Sigel and McDowell attacked him on the west. Fitz John Porter was at the same time ordered to march at daylight from Manassas Junction with his own corps and with King's division of McDowell's corps (which had for some reason fallen back upon that point from the Warrenton turnpike), along the Manassas Gap railroad toward Gainesville, until he should be in close communication with the forces of McDowell and Sigel. At a comparatively early hour the action became general along the line of the Warrenton road, and Pope, seeing that the confederate forces were vigorously pushed by the troops of Sigel, Heintzelman, and Reno, sent orders to McDowell to advance rapidly on the Union left and turn their right flank, and to Fitz John Porter to close up on McDowell's left and attack the enemy in flank and rear. The line of McDowell and Porter would thus have been at right angles with the main line of battle of the Union army. These directions were obeyed by McDowell, but Porter, as he informed Pope by note late in the afternoon, met the enemy in flank in the direction of Gainesville (from which place early in the morning Ricketts had been compelled to fall back before the large force advancing to support Jackson), and retired on Manassas Junction without engaging or rendering assistance to the Union forces; although, according to Gen. Pope, during the whole afternoon and part of the evening of that day troops were passing in plain view and within 2 m. of him to reënforce Jackson. One of his brigades under Gen. Griffin got around to Centreville, where it remained during the 29th and 30th, taking no part in the engagement of either day. The battle raged with fury until dark, at which time the enemy, who stood strictly on the defensive throughout the day, had been forced back some distance toward the Bull Run mountains, leaving their dead and wounded in the field and many prisoners in the hands of the Union forces. The latter, worn out by 12 days of continuous fighting and marching, and very short of provisions, lay down for the night on their arms. "I do not hesitate to say," Gen. Pope observes in his official report, "that if the corps of Porter had attacked the enemy in flank on the afternoon of the 29th, as he had my written order to do, we should utterly have crushed Jackson before the forces under Lee could have reached him." During Friday night heavy reënforcements under Lee and Longstreet reached Jackson, and were massed on his right for the purpose of crushing the Union left and occupying the road to Centreville in Pope's rear. The latter, who had sent to head-quarters an urgent request for rations and forage, received early on the morning of the 30th a letter from Gen. Franklin, written at Alexandria the previous day, stating that he had been directed by Gen. McClellan to reply, that supplies would be forwarded as soon as Pope would send a cavalry escort for their protection. No cavalry, however, could be spared for the purpose, and it became at once apparent that, unless the enemy received a decided check in the battle of the 30th, it would be necessary for the Union army to retire behind Bull run to save men and horses from starvation. On the night of the 29th Fitz John Porter brought his command up from Manassas, and on the next morning Pope's line of battle was drawn up in a direction facing nearly north and at right angles with Bull run, Heintzelman occupying the extreme right, McDowell the extreme left, and Sigel, Porter, and Reno being posted in the centre. The action commenced soon after 1 o'clock in the afternoon by a severe cannonading, by which the confederates sought to mask their movement upon the Union left, and at about 4 o'clock the whole of Pope's troops on the field were engaged at close quarters. A brigade of Union cavalry under Gen. Buford, reconnoitring on the left, detected the flank movement of the enemy in that direction, and at 5 P. M. the hardest fighting of the day took place in front of the Union left and centre, against which Lee pushed forward immense masses of troops. After several hours of severe fighting the Union left gave way under the press of numbers, and at nightfall had been forced back half a mile, although still firm and unbroken, while the right held its ground. About the same time the corps of Gen. Franklin, followed at an interval of 4 m. by the corps of Sumner, both from the army of the peninsula, arrived at Centreville; but Pope, in view of the exhausted condition of his men, decided to waive the advantage which this fresh accession of strength would give him, and retired across Bull run in good order to the heights of Centreville. During Aug. 31 and Sept. 1 both armies rested; and Gen. Pope having ascertained that his total force, including the reënforcements under Franklin and Sumner, fell rather short of 60,000 men, which did not seem sufficient for offensive operations against an enemy numerically much superior, determined to await the further attacks of Jackson. The latter, instead of moving directly upon the strong position of the Union army, began to work slowly around to the north for the purpose of passing Fairfax Court House and turning its rear. Pope therefore fell back to that place, throwing out a strong force under Hooker toward Germantown on his right. Against this latter place, near which the supply trains were stationed, the confederates directed an attack on the evening of Sept. 1, but were driven back after a short but very severe engagement with heavy loss, leaving their killed and wounded in the hands of the Unionists. Among the killed on the latter side were Gens. Kearny and Stevens. On the morning of Sept. 2 the whole of Pope's command, which had been joined on the previous day by Gen. Banks, who had remained behind at Bristoe to convoy the trains, were massed behind Difficult creek between Flint hill and the Warrenton turnpike, with the advance under Hooker at Germantown; and in the afternoon, in accordance with orders from Gen. Halleck, the troops commenced the retreat toward Washington, within the intrenchments of which they arrived in good order and without further loss on the evening of the 3d. The enemy made no serious attempt at pursuit, but, moving northward toward Leesburg, crossed the Potomac into Maryland. No official statement of the casualties in these battles has yet (Dec. 1862) been published, but they could not have been less than 10,000 men on each side. Gen. Pope immediately requested to be relieved of his command, and preferred charges of insubordination and negligence against Gens. Fitz John Porter and Griffin. Gen. McDowell was also relieved of his command, and requested an official inquiry into his conduct during the campaign. In his official report of the campaign in Virginia, published about the same time, Gen. Pope gives the following summary of his operations: "To confront a powerful enemy, with greatly inferior forces, to fight him day by day without losing the army, to delay and embarrass his movements, and to force him by persistent resistance to adopt long and circuitous routes to his destination, are the duties which were imposed upon me. They are, of all military operations, the most difficult and the most harassing both to the commander and to his troops. How far we have been successful will be left to the judgment of our countrymen. The armies of Virginia and of the Potomac have been united in the presence and against the efforts of a wary and vigorous enemy, in greatly superior force to either, with no loss for which they did not exact full retribution."

BURNS, William W., brigadier-general of volunteers in the U. S. army, born in Ohio about 1827, was graduated at West Point in 1847, became a 2d lieutenant in the 5th infantry, was promoted to be a 1st lieutenant in

Aug. 1850, became the quartermaster of his regiment in Nov. 1856, was appointed an assistant commissary of subsistence in Nov. 1858, and in Jan. 1859, relinquished his rank in the line of the army, being made a captain in the subsistence department. In Sept. 1861, he was appointed a brigadier-general of volunteers, has served with the army of the Potomac, was wounded in one of the battles before Richmond, and on Nov. 2, 1862, took command of a division in the army corps of Gen. Willcox.

BURNSIDE, Ambrose Everett, major-general of volunteers in the U. S. army, born in Liberty, Union co., Ind., May 23, 1824. His grandparents emigrated from Scotland toward the close of the last century, and settled in South Carolina, where his father was born. The son was graduated at West Point in 1847, and commissioned 2d lieutenant in the 3d artillery. He was immediately ordered to Mexico, but the war was virtually at an end before he reached the scene of action. He was then stationed at Fort Adams, Newport, R. I., and in 1849 was ordered to New Mexico to join Bragg's battery; but the country proving unsuitable for artillery, the command was reorganized as cavalry, and Burnside put in charge of a squadron, with which he highly distinguished himself in a conflict with the Apaches. In 1850–'51 he filled the office of quartermaster in the Mexican boundary commission, then in charge of Mr. John R. Bartlett. From the copper mines of New Mexico he was sent as bearer of despatches to Washington; and in Dec. 1851, he was promoted to be 1st lieutenant. Returning to Rhode Island, he resigned his commission in 1853, and built an establishment for the manufacture of the breech-loading rifle which bears his name, and the invention of which had occurred to him during his service in Mexico. The business proving unprofitable, he removed to Chicago, and became cashier in the land office of the Illinois central railroad, Gen. McClellan being then in the employ of the same company. Burnside soon became treasurer of the company, and transferred his office to New York city, where he was still residing in 1861. He was then appointed colonel of the 1st Rhode Island volunteers, and 4 days after the call of the president for troops, the first detachment of his regiment, consisting of 150 men and a light battery of 6 guns, started for Washington. At the battle of Bull run, July 21, he commanded a brigade in Hunter's division, and won the highest commendations from Gen. McDowell by his bravery and coolness. He was immediately afterward appointed brigadier-general of volunteers, Aug. 6, and summoned to Washington to assist Gen. McClellan in reorganizing the army. Toward the close of the year he was intrusted with the command of an expedition for the capture of Roanoke island, in the waters of North Carolina, and after spending two months in the necessary preparations at New York, sailed from Hampton roads in Jan. 1862, with 15,000 men, convoyed by a fleet of gunboats under Flag Officer Goldsborough. After encountering a violent storm, the vessels entered Croatan sound in February, and on the 8th the island was taken by a combined land and naval attack, upward of 2,000 of the defenders being taken prisoners. Upon receiving intelligence of the victory, the legislature of Rhode Island voted Gen. Burnside a sword, and on March 18 he was promoted to be a major-general of volunteers. From Roanoke island he at once prepared an attack upon Newbern. On March 13 he landed his troops on the Neuse river, 18 m. below that city, and having marched to within a short distance of the town attacked the enemy's works the next morning, and after a contest of 4 hours carried them by the bayonet. The town of Beaufort was next occupied by a detachment of his army, and Fort Macon, which commands the approach to that place by sea, was invested. It held out until April 25. On the retreat of Gen. McClellan from the Chickahominy to the James river (July, 1862), Gen. Burnside was ordered to reënforce him with the greater part of his army. He accordingly proceeded to Newport News, and shortly before the withdrawal of the army of the Potomac from the peninsula occupied Fredericsburg where he remained until compelled by the defeat of Gen. Pope to fall back toward Washington. When the confederates invaded Maryland his command was largely increased, and with Gen. McClellan he pushed forward to meet them, defeating them in the battle of South mountain, near Boonsborough, Md., Sept. 14. At the battle of Antietam, Sept. 17, he commanded the left wing, and was highly distinguished. The several army corps being reorganized in that month, he was assigned to the 9th, and on Oct. 26 crossed the Potomac at Berlin near Harper's Ferry, and occupied Lovettsville. About the same time he was placed in command of one of the 3 grand armies into which the army of the Potomac was divided, his force consisting of the corps of Gens. Couch, Willcox, and Slocum. On Nov. 7 he superseded Gen. McClellan in command of the whole army of the Potomac.

BURTON, Richard Francis, a British traveller and author, born in Tuam, Galway, in 1821. He was educated partly in England and partly in France, entered the service of the East India company, and soon obtained a commission as lieutenant in the Indian army. While stationed in the presidency of Bombay, he spent some time in exploring the Neilgherries or Blue hills. He next served for 5 years in Sinde under Sir Charles J. Napier. Enterprising and fond of adventure, Lieut. Burton published the results of his observations in "Sinde, or the Unhappy Valley" (2 vols. 8vo., 1850), "Falconry in the Valley of the Indus" (1850), and "Sinde and the Races that inhabit the Valley of the Indus" (1851). Soon afterward he published "Goa and the Blue Mountains." He had by this time acquired many of the oriental languages, and conversed like a native in Afghan, Persian, Hindostanee, Mooltanee (of which he published a grammar), and Arabic. Having perfected himself in the last, he resolved to visit Mecca and Medina, a perilous adventure, in which no Christian had succeeded since Burckhardt. Accordingly he returned to England near the close of 1851, and after attempting in vain to obtain 3 years' leave of absence for the exploration of the Arabian peninsula, a year's furlough was granted, and in April, 1853, he embarked at Southampton in the costume of a Persian noble. After spending a month at Alexandria, he assumed the character of a wandering dervish, and in this disguise, which he succeeded in maintaining, though more than once in imminent peril, penetrated to the holy cities, and returned in safety. The publication of his adventures, under the title of " A Pilgrimage to El Medinah and Meccah" (3 vols. 8vo., London, 1855), produced a great sensation. He returned immediately to Cairo, and made an unsuccessful attempt to penetrate into the interior of Africa, an account of which he gave in his " First Footsteps in East Africa" (1856). In the Crimean war he was made chief of staff under Gen. Beatson, with the rank of captain, and in 1856 started with Capt. Speke upon another exploring expedition from the E. coast of Africa, penetrating some distance into the interior. Capt. Burton's narrative of this expedition, which was not altogether successful, was published under the title of "The Lake Regions of Central Africa" (1860). This was hardly in type before he had set out for America to explore the Mormon settlement in Utah, an account of which appeared near the close of 1861, entitled "The City of the Saints." The English and French geographical societies have conferred on him their gold medals for his discoveries, and the British government in 1861 appointed him consul at the island of Fernando Po.

BUTLER, Benjamin Franklin, major-general of volunteers in the U. S. army, born in Deerfield, Rockingham co., N. H., Nov. 5, 1818. He was graduated at Waterville college, Maine, in 1838, and commenced the study of the law at Lowell, Mass. In 1841 he was admitted to the bar, and continued in the practice of the law in Massachusetts until April, 1861, acquiring a high reputation as an advocate, especially in criminal cases. He became identified with the democratic party, took an active share in politics, and was a member of the Massachusetts house of representatives in 1853, and of the state senate in 1859-'60. He was a member of the constitutional convention of 1853, and in 1860 was a delegate to the democratic presidential convention at Charleston, and afterward at Baltimore, in which he supported the nomination of Mr. Breckinridge. On his return home he was nominated by the Breckinridge democrats for governor of Massachusetts, but was defeated by John A. Andrew. He had passed through various grades in the Massachusetts militia, and at the time of the president's call for troops in April, 1861, held the commission of brigadier-general. On April 17 he marched with the Massachusetts 8th regiment to Annapolis, brought out the frigate Constitution, and was placed by the war department in command of the department of Annapolis, including the city of Baltimore. He occupied Baltimore, May 13, fortified it, and on May 16 was appointed major-general of volunteers, and transferred to the command of Fortress Monroe and the department of eastern Virginia. On Aug. 22 he proceeded with an expedition against Forts Hatteras and Clark on the coast of North Carolina, which fell upon the 29th of the same month. He then returned to Massachusetts to recruit an expedition for the gulf of Mexico. On Feb. 20, 1862, he left Boston for Ship island in Mississippi sound, at which place he arrived on March 23, with a force of 15,000 men, to attack New Orleans. Leaving Ship island on April 17 with 5,000 troops, he went up the Mississippi, and landed his men in the rear of Fort St. Philip, which with Fort Jackson surrendered to Capt. Porter of the mortar fleet on the 26th, after Flag Officer Farragut had passed them with his flotilla. Gen. Butler arrived at New Orleans with 2,500 men on May 1, took possession of the city, and by a vigorous administration reduced it to a state of order and security.

BUTTERFIELD, Daniel, brigadier-general of volunteers in the U. S. army, born in Oneida co., N. Y., in Oct. 1831. He was graduated at Union college, Schenectady, in 1849, and while still young interested himself in military studies. At the breaking out of the civil war in 1861 he was engaged in mercantile business in the city of New York, and was colonel of the 12th regiment of New York state militia. At the call of the president for troops he accompanied his regiment to Washington, and until the early part of July was stationed in that city or its vicinity. He then joined the division under Gen. Patterson on the upper Potomac, where he was assigned to the command of a brigade. Upon the enlargement of the regular army he was commissioned as lieutenant-colonel of the 12th regiment of infantry, and in Sept. 1861, he received the appointment of brigadier-general of volunteers, and was assigned to the army corps commanded by Gen. Fitz John Porter. He remained in front of Washington until the spring of 1862, when he accompanied the army under Gen. McClellan to Yorktown. He took a conspicuous part in the action at Hanover Court House, and subsequently at Mechanicsville, Gaines's mill, and in the battles fought during the retreat of McClellan's army to Harrison's Landing. He participated in the great battles under Pope and McClellan in August and September, 1862, and toward the end of October was placed in command of the division previously under Gen. Morell. He has published "Camp and Outpost Duty" (New York, 1862).

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CADWALADER, George, major-general of volunteers in the U. S. army, born in Philadelphia, studied and practised law there, and on the breaking out of the Mexican war was appointed a brigadier-general, March 3, 1847, by President Polk. He distinguished himself in the battle of Molino del Rey, and was brevetted a major-general for gallantry in the battle of Chapultepec. On the reduction of the army after the termination of the war, he left the service. When the civil war broke out in 1861 he promptly declared himself in favor of sustaining the government of the United Sates, and was appointed by the governor of Pennsylvania a major-general of the volunteer force raised by that state under the call of the president. He had command at Baltimore in May, 1861, and was second in command in the force which moved upon Winchester under Maj. Gen. Patterson in June. He was honorably discharged on the expiration of his term of service, and on April 25, 1862, was appointed by the president a major-general of volunteers. In Sept. 1862, he was appointed a member of a court of inquiry convened at Washington under the presidency of Maj. Gen. Hunter, to examine into the conduct of various prominent officers; and he was afterward made president of the court of inquiry ordered in the case of Gen. McDowell.

CÆSIUM (Lat. *cæsius*, bluish gray), an alkaline metal recently discovered, through application of the method described under Spectrum Analysis in this supplement, by Professors Kirchhoff and Bunsen. In examining the spectrum afforded by the familiar alkalies obtained from certain mineral waters, Bunsen detected the presence of two bright blue lines, or a double blue line, situated near the strontium line δ, and which had not before been observed. Thus led to infer the existence in the compounds employed of a new alkaline metal, he subsequently confirmed this anticipation by chemical analysis. Precipitating from the Dürkheimer water by bichloride of platinum the potash salts and associated compounds contained in it, he then separated as much as possible of the precipitate by boiling with water; and converting the solid chlorides remaining into carbonates, he dissolved out from these by action of absolute alcohol the carbonate of the new metal, using other precautions to insure its purity. From the carbonate the new metal was obtained as an amalgam, *i. e.*, in union with mercury. Cæsium appeared constantly to accompany, and in less quantity, the metal rubidium (see Rubidium, in this supplement); in 10 kilogrammes of the Dürkheimer water, less than 2 milligrammes of the chloride of the former exists. Cæsium takes its name from the color of its characteristic line in the spectrum. Its equivalent is 123.4; its symbol, Cs. Such is the avidity of this metal for oxygen, that even in the condition of amalgam it oxidizes in the air, and decomposes cold water. Its entire separation as an element must be correspondingly difficult, and appears not yet to have been effected. In agreement with facts just stated, however, cæsium possesses also the peculiar interest of being now (1862) the most electro-positive element known, standing in this respect before not only potassium but also rubidium. Its hydrate $(CsO,HO+HO)$ is extremely caustic. Its carbonate, also highly caustic, forms indistinct crystals, that are deliquescent. Its bicarbonate appears in permanent, glassy, prismatic crystals. Like potassium and several other metallic elements, it forms an alum, which is crystalline. Its sulphate and nitrate have been obtained; and its chloride crystallizes in cubes, which deliquesce in air.

CALDWELL, John Curtis, brigadier-general of volunteers in the U. S. army, born in Vermont in 1831. He was graduated at Amherst college in 1855, removed to Maine, and took charge of Machias academy. From this position he was appointed colonel of the 11th Maine volunteers, Sept. 21, 1861, and on June 10, 1862, was made brigadier-general of volunteers, his commission dating from April 28. He commands a brigade under Gen. Hancock in Couch's army corps in the army of the Potomac. He was slightly wounded in the battle of Fredericsburg, Dec. 13, 1862.

CAMERON, Simon, an American statesman, born in Lancaster co., Penn., in 1799. Left an orphan at the age of 9 years, without resources or friends except such as became interested in his destitute state and energetic ambition, he found employment as an office boy in a printing establishment, and thus learned the trade of a printer. He labored in this occupation at Harrisburg and Washington, D. C., zealously devoting his leisure hours to the acquisition of learning. In 1820 he became editor of a newspaper at Doylestown, Penn., and in 1822 removed to Harrisburg and settled there as the editor of a journal, in which he advocated the election of Gen. Jackson to the presidency, and defended the policy of the democratic party in general. He prospered rapidly in his personal as well as his political undertakings, and in 1832 was at the head of the Middletown bank of Pennsylvania. He now devoted himself especially to railroad enterprises, and became president of two railroad companies; at the same time he was appointed adjutant-general of the state, an office whose duties were then not very onerous. When, on the inauguration of President Polk in 1845, Mr. Buchanan resigned his seat in the federal senate in order to become secretary of state, Mr. Cameron was elected to fill the vacancy. He voted in the senate in 1846 in favor of the notice to England to terminate the joint occupancy of Oregon, against settling the Oregon dispute by ceding to England the region between lat. 54° 40′ and lat. 49° N., and in favor of declaring that war existed with Mexico by the act of that country; and in 1848 he voted in favor of Mr. Douglas's proposition to extend the Missouri compromise line of lat. 36° 30′ N. to the Pacific ocean, prohibiting slavery N. and tolerating it S. of that line. The term for which he had been elected to the senate expired March 4, 1849, when President Taylor was inaugurated, and he returned for a time to the pursuits of private life. Never a violent partisan politician, and counting his friends among the members of the whig, the American, and the democratic parties, after the repeal of the Missouri compromise in 1854, and the attempt to establish slavery in Kansas against the wishes of a majority of its people, he connected himself with the "people's party" in Pennsylvania, and in 1856 voted for the election to the presidency of Col. Fremont. Though his party was defeated in the state, Mr. Cameron was again chosen as a representative of Pennsylvania in the federal senate, receiving in the state legislature the suffrages of the republicans, the members of the American party, and several democrats. During this term of service he uniformly acted with the republican senators, and was widely regarded as likely to receive the nomination of that party for the presidency at the next election. In the national convention held at Chicago May 16 and 17, 1860, he was proposed by the Hon. A. H. Reeder of Pennsylvania as a candidate for that distinction, and was supported by the votes of the entire delegation from Pennsylvania, beside one vote each from Virginia, Iowa, and Nebraska. When Mr. Lincoln became president, he chose Mr. Cameron for the office of secretary of war, which post he filled until Jan. 14, 1862, when he resigned and was appointed envoy extraordinary and minister plenipotentiary to Russia, for which country he sailed from New York on April 19. He remained in Russia for some time, then spent some weeks in travelling on the continent, and returned to the United States, arriving in New York Nov. 8.

CAMP JACKSON, an encampment of Missouri state militia in the suburbs of St. Louis, formed May 6, 1861, under Brig. Gen. Frost, and surrendered to Capt. Lyon, commandant of the U. S. arsenal, May 10. It was one of the camps of instruction organized in various parts of the state by authority of the governor, C. F. Jackson. Capt. Lyon regarded the camp as hostile to the national government, among other reasons, because it was occupied principally by known sympathizers with secession. He therefore assembled a force of between 5,000 and 6,000 citizens organized as "home guards," under Cols. Blair, Sigel, and Boernstein, and, with the addition of the small U. S. force at the arsenal, marched on the morning of May 10 to the place where it was situated, and completely surrounded it. He then addressed to Gen. Frost a demand for the surrender of himself with all his men, which was agreed to, and the state troops, to the number of 639, gave themselves up, refusing to take the oath of allegiance to the government of the United States, on the ground that it would be an admission of their previous disloyalty. Meanwhile, a great number of people from the city and the country about had collected in the vicinity of the camp, apparently with the design of taking part with the state troops, but no demonstration was made at the time of the surrender. When the file of prisoners had reached a point just at the entrance into the city, an attack with stones upon the column called forth a discharge of muskets from the U. S. troops, resulting in the killing and wounding of 25 of the throng. Great excitement ensued, but no further outbreak then occurred. On the next day a disturbance was caused by the appearance in the streets of St. Louis of a German regiment who had enlisted in the home guard; they were received with insults by the crowds who were excited by the affair of the previous day, and three shots were fired upon them; they therefore turned and fired upon the people, killing 6 and wounding several. This ended the disturbances connected with the surrender of Camp Jackson.

CAMP WILD CAT, an encampment of Union soldiers situated in Laurel co., in the S. E. part of Kentucky, within a few miles of Loudon, the capital of the county, where a battle was fought Oct. 21, 1861. The camp had long given protection to the Union men of that district, and was therefore especially marked by the confederates for attack. Gen. Zollicoffer, taking advantage of a temporary reduction in the forces defending it, made a rapid movement upon it. Information of his purpose reached Col. Garrard, who was in command on the 14th, at which time he had but 600 effective men, including a Kentucky regiment and some home guards. Having made known his situation to the nearest Union camp, he was reënforced by parts of the 17th and 14th Ohio, 33d Indiana, Standard's Ohio artillery, and Woolford's cavalry, the whole being under the command of Gen. Schoepf. Zollicoffer's forces consisted of about 6,000 infantry, 1,600 cavalry, and one battery. The point of attack was a hill commanding the Union camp, which the confederates made two attempts to take, the first attack lasting for an hour; they were each time repulsed with loss, and retired during the night following; owing to fatigue and the want of supplies, the Union troops could not pursue them. The Union loss was 4 killed and 21 wounded. The loss of the confederates is not known; 19 of their dead were buried by the Union soldiers, and many more were carried from the field.

CAMPBELL, William B., brigadier-general of volunteers in the U. S. army, born in Sumner co., Tenn., Feb. 1, 1807. He studied law, commenced practice at Carthage, Tenn., in 1830, was elected district attorney of the 4th district in 1831, and became a member of the legislature in 1835. He served as captain of a volunteer company during the Creek and Florida wars; was elected to congress in 1827, 1829, and 1841; was colonel of the 1st Tennessee volunteers during the Mexican war; became judge of the 4th circuit of Tennessee immediately after his return; and in 1851 was elected governor of the state, having throughout the canvass advocated the compromise measures of 1850. Refusing to be a candidate for reëlection, he retired to private life at the close of his term of office. On the breaking out of the civil war in 1861 he canvassed his state in opposition to the disunionists, and on June 30, 1862, was appointed brigadier-general of volunteers, but on account of feeble health has not yet been assigned to active duty.

CANBY, Edward Rich Sprigg, brigadier-general of volunteers in the U. S. army, born in Kentucky about 1817, was graduated at West Point in 1839 and appointed 2d lieutenant in the 2d infantry; became assistant commissary of subsistence in Oct. 1839, 1st lieutenant in June, 1846, and assistant adjutant-general in March, 1847; distinguished himself at Cerro Gordo; was brevetted major for gallantry at Contreras and Churubusco, Aug. 20, and lieutenant-colonel for gallantry at the Belen gate of Mexico, Sept. 13; became captain in the 2d infantry in June, 1851, and major of the 10th infantry in March, 1855. He served in the Utah expedition under Gen. A. S. Johnston, and in 1859-'60 had command of Fort Bridger in Utah. When the civil war broke out in 1861 he was in New Mexico, and exhibited great energy and skill in defending the territory against the attacks of the confederates, for a detailed account of which see Fort Craig, in this supplement. On May 14, 1861, he was promoted to be colonel of the 19th infantry, and on March 31, 1862, he was made a brigadier-general of volunteers. In Sept. 1862, he was relieved from duty in New Mexico, and on Nov. 6 he was ordered to Pittsburg to take command of the drafted men collected there from western Pennsylvania.

CARDWELL, Edward, D.D., an English clergyman, born at Blackburn, Lancashire, in 1787, died in Oxford, May 23, 1861. He was graduated at Brasenose college, Oxford, became a fellow of his college in 1809, was for several years tutor and lecturer, and in 1814 was appointed one of the university examiners. In 1826 he was elected Camden professor of ancient history, and in 1831 succeeded Archbishop Whately as principal of St. Alban's hall. He held for some years the college living of Stoke-Bruerne, was for many years a member of the governing council of the university, and under the last three chancellors private secretary. He published "The Two Liturgies of Edward VI. Compared" (8vo., 1840); "The Documentary Annals of the Reformed Church of England" (2 vols. 8vo., 1847); "History of Conferences and other Proceedings connected with the Revision of the Book of Common Prayer" (1842); "Synodalia, a Collection of Articles of Religion, Canons, and Proceedings of Convocation, in the Province of Canterbury, from 1547 to 1717" (2 vols. 8vo., 1842); "Reformatio Legum Ecclesiasticarum, or the Reformation of the Ecclesiastical Laws for the Church of England, as proposed by the Chief Reformers and attempted to be carried out in the Reigns of Henry VIII., Edward VI., and Elizabeth" (1850); and an edition of Bishop Gibson's *Synodus Anglicana* (1854), beside an edition of Aristotle's "Ethics," "Lectures on the Coinage of the Greeks and Romans," an edition of the Greek Testament with *variorum* readings, a marginal harmony, notes, &c., and an annotated edition of Josephus's "History of the Jewish War," with the original text (2 vols., Oxford, 1838).

CARLETON, James Henry, brigadier-general of volunteers in the U. S. army, born in Maine. In Feb. 1839, during what was called the Aroostook campaign, arising out of boundary disputes between the United States and Great Britain, he became captain of a company of Maine riflemen, and on the settlement of the dispute was appointed 2d lieutenant in the first U. S. dragoons. He became 1st lieutenant in March, 1845; served on Gen. Wool's staff in Mexico; was promoted to be captain in Feb. 1847, and brevetted major for gallantry at Buena Vista; and after the war served on the western frontier and in California and Utah. When the civil war broke out he was ordered by Gen. Sumner to southern California. In Sept. 1861, he was promoted to be major in the 6th cavalry. The following spring he raised a body of volunteers, known as the "column from California," and marched with them across the Yuma and Gila deserts, through Arizona to Mesilla on the Rio Grande. He was appointed brigadier-general of volunteers April 28, 1862, and ordered to relieve Gen. Canby in command of the department of New Mexico. Gen. Carleton is the author of a "History of the Battle of Buena Vista, and of the Operations of the Army of Occupation for one Month" (12mo., New York, 1848).

CARNIFEX FERRY, a point upon the Gauley river, near Summerville, the capital of Nicholas co., Va., where a battle was fought between the U. S. troops and confederates, Sept. 10, 1861. Gen. Floyd had intrenched himself in a strong position on the top of a mountain on the W. bank of the river, having under his command 5,000 men, with about 16 pieces of artillery. His rear and the extreme of both flanks were inaccessible; in front his defences consisted of a parapet battery flanked by breastworks of logs, and on the left of his centre, where he was comparatively open to attack, a double breastwork was erected; his whole front was masked by forests and a close thicket. Thus by natural position and by the artificial defences thrown up, the place was of most formidable strength. On Sept. 10 Gen. Rosecrans, with a brigade of Ohio troops, and having under him Gen. Benham, marched 17 miles, passing through Summerville, with the design of finding and attacking Gen. Floyd, of whose exact position he was ignorant, though he knew he was in the vicinity of Gauley river. Gen. Rosecrans himself made a reconnoissance, and, having observed the strength and obscurity of Floyd's position, directed Gen. Benham to advance cautiously, the purpose being not to bring on a general engagement, but to discover more definitely where the enemy lay. When the column had reached a point but a few hundred yards from the confederate works, it was opened upon with a severe fire, and was compelled to withdraw a short distance; then halting, Gen. Benham ordered up his artillery and threw a hot fire of shells into the intrenchments. It appeared that the weak point of the position was the right flank, and thither two regiments were ordered to proceed. One of these did so, but the other failed to join in time, and the consequence was that the first regiment, unsupported, was able to do no more than make a reconnoissance of the position. During this time two separate advances were made by single regiments against the left of Gen. Floyd, but they were repulsed by a heavy fire, Col. Lowe, of the 12th Ohio regiment, falling dead at the head of his men. The action, which had increased from a reconnoissance to a battle, had thus far been fought in a desultory manner by single regiments. Gen. Rosecrans at first decided to make a final assault upon the intrenchments and attempt to carry the works by storm; but in the midst of the movement the order was countermanded, it being thought imprudent to make the assault without a more thorough reconnoissance. It was now quite dark, the fight having continued from 3 P. M., and the national troops lay on their arms all night, being well posted for resuming the attack in the morning. When the day broke, however, it was discovered that Gen. Floyd, startled by the furious attacks upon all vulnerable points of his position, and fearing that his retreat toward Lewisburg would be cut off, had fled during the night, leaving large quantities of arms, ammunition, camp stores, and equipage behind him. He had crossed the Gauley river, breaking down the bridge behind him, and destroying the ferry boat. There were no means by which the national troops could cross the river, and they were moreover too much fatigued to pursue. The Union loss in this action was about 20 killed and 100 wounded; that of the confederates was not ascertained. The force under Gen. Rosecrans did not exceed 4,000 men.

CARR, Eugene A., brigadier-general of volunteers in the U. S. army, born in Erie co., N. Y., March 20, 1830. He was graduated at West Point in 1850, receiving a commission in the mounted rifles, and for several years was engaged in Indian warfare in New Mexico, Texas, and the far west. In a skirmish near Diablo mountain in 1854 he was severely wounded, and for his gallantry on this occasion was promoted to be 1st lieutenant in the 1st cavalry. In 1857 Lieut. Carr was ordered to Kansas, and during the troubles there was aid to Gov. Robert J. Walker. In 1858 he served under Col. Edwin V. Sumner in the Utah expedition, and in June of that year was made captain. In 1861 he received permission to accept the command of the 3d Illinois volunteer cavalry. In the battle of Pea ridge he had command of a division, and was severely wounded. For his gallantry on this occasion he was made brigadier-general of volunteers, dating from March 7, and assigned a command under Gen. Curtis in Arkansas. On July 17, 1862, he was promoted to be major in the 5th cavalry.

CARR, Joseph B., brigadier-general of volunteers in the U. S. army, born in Albany, N. Y., about 1824. He was apprenticed to a tobacconist at Troy, entered the volunteer militia, in which he rose to be colonel, and in April, 1861, was chosen lieutenant-colonel of the 2d New York volunteers. A few weeks later he was promoted to be colonel, and was ordered with his regiment to Newport News. During the campaign of the Chickahominy he was attached to Gen. Hooker's command. He was nominated brigadier-general in Sept. 1862.

CARRICK'S FORD, a ford on the Cheat river, in Tucker co., Va., 27 m. from Laurel hill, the scene of a battle fought July 14, 1861, by the national forces under Brig. Gen. Morris, Indiana volunteers, and the confederates under Brig. Gen. R. S. Garnett, of Virginia. After the defeat of the confederate forces at Rich mountain and the surrender of Col. Pegram, Gen. Garnett, who had been for a week at Laurel hill, attempted to retreat in the direction of St. George, but was overtaken at Carrick's ford by the advance of Gen. Morris's column, consisting of the 14th Ohio volunteers, and the 7th and 9th Indiana, with a section of Col. Barnett's battery, all under command of Capt. Benham of Gen. Morris's staff. Garnett had a strong position on a bluff commanding the ford, but it was turned by 6 companies of the 7th Indiana, and his force, consisting of the 23d and 37th Virginia regiments, a Georgia regiment, a battalion of infantry, 4 companies of cavalry, and a company of Virginia artillery, were routed, but only pursued for a mile, the attacking party being exhausted by a long march in the rain and mud, without food. Gen. Garnett was killed.

CARTER, Samuel Powhatan, brigadier-general of volunteers in the U. S. army, born in Elizabethton, Carter co., Tenn., Aug. 6, 1819. He was educated at Nassau Hall, N. J., and in

Feb. 1840, was appointed a midshipman in the navy. From 1851 to 1853 he was assistant instructor of infantry tactics at the naval academy. In 1855 he was promoted to be lieutenant. He was present at the capture of Vera Cruz, serving on board the Ohio; and he was also engaged in the capture of the Barrier forts, near Canton, China, in 1856, and was complimented for gallantry on that occasion by his commander. He was ordered again to the Annapolis naval school as assistant instructor of seamanship (1858–'9). In July, 1861, he was temporarily transferred from the navy to the war department for the special duty of organizing troops from East Tennessee. He was appointed colonel of the 2d Tennessee volunteers, and in Sept. 1861, was placed in command of the East Tennessee brigade at Camp Dick Robinson. He was acting brigadier at the battle of Mill Spring, and received the commission of brigadier-general May 1, 1862. He was afterward stationed at Cumberland gap.

CARTHAGE, the capital of Jasper co., Mo., situated on Spring river, 220 m. S. W. from Jefferson City. It was the scene of a battle fought July 5, 1861, between the national forces under Col. (now Maj. Gen.) Sigel, numbering about 1,200, and the Missouri state troops, numbering about 5,000, under Gens. Parsons and Rains. On the morning of July 5, soon after 9 o'clock, Col. Sigel, advancing to intercept the state troops on their march S. to join the Arkansas troops under Ben McCulloch, met them on a prairie about 8 m. N. of Carthage, near Dry Fork creek. The forces of the enemy consisted chiefly of cavalry, with some artillery, which however was badly managed throughout the battle. After about two hours' fighting, conducted on the Union side by artillery, the hostile guns were silenced, and the enemy broke their ranks. At this juncture their cavalry, in number about 1,500, attempted to cut off Sigel's transportation train. He at once ordered a retreat, calling toward him at the same time his menaced baggage, then 3 m. in his rear; by skilful manœuvring with his infantry and artillery he retarded the progress of the enemy's cavalry, and effected this movement with complete success. The state troops then endeavored to surround the national forces, and actually cut off the only road leading to Carthage. Upon this, Sigel placed his baggage in the centre of his column, where it was well protected, and moved forward for the purpose of clearing the obstructed road. By a feint the enemy were led to believe that the national troops sought to open a new way; they therefore withdrew from their position in order to meet this supposed design, and received a terrible flank fire of artillery, while the national infantry advanced at double quick step along the road, and in a few minutes the enemy were flying in confusion, leaving behind a number of prisoners and riderless horses. Col. Sigel continued to retire toward Carthage, being slightly harassed on the way by squads of the enemy; his purpose was to press on to Sarcoxie, since his ammunition was beginning to give out, and to connect with other bodies of national troops. The road by Carthage to Sarcoxie being covered within a mile of the former place by a forest, Sigel was anxious to gain this point, whither the enemy's cavalry could not follow him. It was late in the afternoon when this part of the road was reached, and there the state troops made a last stand, the most desperate of the day, hoping to prevent the national forces from gaining the cover of the woods. After two hours' fighting the enemy were forced to retire, and Sigel continued his march to Sarcoxie, reaching that place on the morning of the 6th, and thence falling back to Mount Vernon. The Union loss was 28 killed and about 60 wounded; that of the enemy was estimated incomparably larger, the fight being conducted mainly by artillery, and the fire of the Union forces being accurate, while that of the enemy was badly directed and early silenced. A guard of 100 men, however, left by Sigel at Neosho, was captured by Ben McCulloch.

CASEY, Silas, brigadier-general of volunteers in the U. S. army, born in East Greenwich, R. I., July 12, 1807. He was graduated at West Point in 1826, received a commission in the 7th infantry, was in active service in Florida through the whole of the Seminole war, became 1st lieutenant in the 2d infantry in 1836, and was promoted to be captain in 1839. At the commencement of the Mexican war he was in command of the post at Mackinaw, whence he was ordered to join his regiment, the 9th infantry, at Vera Cruz. He was in the chief battles of the war, and was brevetted major for his services at Contreras and Churubusco, and lieutenant-colonel for his gallantry at Chapultepec, where he was wounded while leading a storming party, his life being saved by the ball striking the plate on his sword belt. In 1849 he was ordered to California, and remained 3 years at Benicia. Thrice since that time he has been sent to the coast of the Pacific, and distinguished himself in conflicts with the Indians on Puget's sound. He was promoted to be lieutenant-colonel in 1855, and at the breaking out of the civil war was in command at Fort Steilacoom, Washington territory. From this post he was ordered to Washington, appointed brigadier-general of volunteers, Aug. 31, 1861, and colonel of the 4th infantry, Oct. 9, and was charged with organizing and disciplining the volunteers in and near the capital. He was afterward assigned to a division in Gen. Keyes's corps of the army of the Potomac, and, occupying with it the extreme advance before Richmond, received the first attack of the enemy at Seven Pines, May 31, 1862, his division suffering severely. In September he took the general command of the newly organized regiments arriving at Washington, which post he still holds. He is author of the "System of Infantry Tactics" (2 vols., New York, 1861) now in use in the U. S. army.

CEDAR MOUNTAIN, an eminence of a sugar-loaf shape in Culpepper co., Va., situated about midway between Culpepper Court House and the Rapidan river, where was fought, Aug. 9, 1862, a severe battle between a Union force commanded by Gen. N. P. Banks and the confederate armies of Gens. Jackson, Ewell, and A. P. Hill. On the 8th of the month Gen. Pope was at Culpepper Court House with a large portion of the army which, under his command, was operating in the direction of Richmond, in order to afford Gen. McClellan an opportunity to retire unmolested from the James river. Ascertaining on that day that his cavalry advance under Gens. Crawford and Bayard, which had been skirmishing along the line of the Rapidan, had fallen back in consequence of the passage of the river in force by the enemy, he sent forward Gen. Banks with the divisions of Augur and Williams to hold them in check. On the morning of the 9th Banks drew up his forces on an open and elevated plateau somewhat more than a mile distant from Cedar mountain, the densely wooded slopes of which were occupied by heavy confederate batteries, while their infantry were posted along a range of elevations and ravines, also wooded, opposite the Union right wing. The whole Union line occupied lower ground than that of the confederates, and was much less protected by natural defences. At 3 o'clock in the afternoon the confederates opened from their batteries on the mountain side, and for several hours a severe artillery contest raged between the two armies, the advantage of position being decidedly with the confederates, who were enabled to pour a destructive enfilading fire into the Union lines. At 5 o'clock, the confederate infantry being reported to be in great force on the Union right, Gen. Banks ordered forward the troops of Augur with a portion of those of Williams, and the battle soon became general. Notwithstanding, however, that the Union artillery, which had now obtained the range of the enemy's position, was beginning to reply with vigor, the right wing was so greatly annoyed by the fire from some batteries concealed in the opposite woods, that Gen. Banks determined to attempt their capture. Accordingly, between 6 and 7 o'clock, 3 desperate charges were made against this part of the confederate line by the brigades of Crawford, Geary, and Gordon. On each occasion they were received by a deadly fire from the infantry concentrated in the woods, and compelled to fall back with severe loss. But although the attempts to take the batteries proved unsuccessful, they developed the position and numbers of the confederate force with such exactness, that the Union artillery was enabled to open with great effect upon that part of their line. The confederate loss was here very severe, Gens. Winder and Trimble being among the killed. The Union loss was also considerable, and shortly after 7 o'clock Gen. Banks, finding himself confronted by a greatly superior force, fell slowly back to meet the supports under Pope which were close at hand. The latter general arrived about this time upon the field with portions of Sigel's and McDowell's corps, and the exhausted troops of Banks retired behind Ricketts's division, which, owing to the contracted area of the field, could not deploy upon it until Banks had retired. The infantry firing ceased soon after, but the cannonade between the armies was maintained until midnight, an unusually bright moonlight rendering objects and positions distinctly visible. Both armies rested on their arms during the remainder of the night, the Union forces having retired nearly a mile from their original position, and at daybreak of the 10th sharp skirmishing recommenced along the lines. But the main body of the confederates, notwithstanding they had been heavily reënforced by Gen. A. P. Hill, fell back several miles, leaving the field of battle in possession of their adversaries, and requesting permission to bury their dead. The loss on each side probably exceeded 2,000 in killed, wounded, and missing. Gen. Banks was severely injured by being thrown from his horse in consequence of a collision with a runaway horse.

CENTREVILLE. See BULL RUN.

CHAPMANVILLE, a post town of Logan co., in the extreme western part of Virginia, near which a sharp skirmish took place Sept. 26, 1861, between the 34th regiment of Ohio zouaves, a portion of the 1st Kentucky, and 200 Virginia home guards on one side, and 500 confederates on the other. The latter were in a strong position behind breastworks, but the zouave regiment carried the intrenchment by storm, killing Col. J. W. Davis, and completely routing the whole force of the confederates. The Union loss was 4 killed and 8 wounded; that of the confederates, 30 killed, 50 wounded, and several taken prisoners.

CHEAT MOUNTAIN, a portion of the Alleghany range, on the eastern boundary of Pocahontas co., Va., which was the scene of severe skirmishing between a few hundred of the national forces and about 9,000 confederates under Gen. R. E. Lee, on Sept. 12 and 13, 1861. The affair was important rather because it prevented the confederates from gaining a strong position than on account of its magnitude. The latter advanced on Sept. 12 against Gen. Reynolds, who with one brigade was in camp at Elkwater; two companies of infantry checked the enemy's column. The confederates then threw a force of 5,000 between the post at Elkwater and that on Cheat summit, the two being separated by a bridle path of 7 miles over the mountains, and by a wagon road of 18 miles, leading by way of Huttonsville; on this latter road the enemy took their second position. An attack was ordered to be made by the Union troops from each camp; both attacking parties were small, but advantageously placed. They both started on the 12th, and skirmished lightly with the enemy, no decisive result being reached when night fell. On the morning of the 13th the force from the camp on Cheat summit, 300 in number, first met the confederates, engaging them with such effect that they broke and fled in confusion, leaving large quantities of clothing and equipments on the ground. The detachment from the other camp was unable to find the enemy, and passed on by an unobstructed road to the summit. While this was going on, Gen. Lee, with the remaining 4,000 or 5,000 of his force, made an attack on Elkwater; but he shortly withdrew under a severe fire of artillery. On the 14th the confederates concentrated at a distance of 10 miles from Elkwater, and on the 15th once more threatened Cheat summit; they were repulsed, however, and finally retired. The Union loss was 9 killed, 15 wounded, and about 60 prisoners; that of the confederates was about 100 killed and 20 prisoners; among their killed was Col. John A. Washington, of Gen. Lee's staff.

CHEATHAM, Benjamin Franklin, a general in the service of the confederate states, born in Nashville, Tenn., of a family of much distinction and influence, entered the U. S. service in May, 1846, as a captain in Campbell's regiment of 12 months' volunteers raised for the Mexican war, distinguished himself under Col. Harney at Medelin, and was honorably discharged in May, 1847, at the expiration of the term for which the regiment had enlisted. He now returned to Tennessee, and in Oct. 1847, was again mustered into the U. S. service as colonel of the 3d Tennessee volunteers, enlisted for the duration of the war, which served till July, 1848. He was one of the first Tennesseeans to enlist in the civil war against the U. S. government in 1861, and was early appointed a brigadier-general in the confederate army. He commanded at Mayfield, Ky., in Sept. 1861, led the confederates in the battle of Belmont, served afterward at Columbus, Ky., and commanded the 4th division of the army which entered Kentucky in Sept. 1862, under Gen. Bragg, with which he took part in the battle of Perryville. He is now a major-general.

CHESS, and Brome Grass, common names of several species of the genus *bromus*, belonging to the natural order *gramineæ*, or grasses, and tribe *festuceæ* (fescue grass, &c.). In the wheat-raising districts of the United States the name chess is given particularly to the species *bromus secalinus*, which is also called cheat, and, from its introducer into this country as a grass of supposed value, Willard's bromus. Among the characteristics of the genus are: spikelets with 5 to many flowers, panicled, glumes not quite equal, shorter than the flowers, mostly keeled, the lower with 1 to 5, the upper with 3 to 9 nerves; the flowers lanceolate, compressed; the paleæ herbaceous, the lower keeled, 5–9-nerved, awned or bristle-pointed from below the tip; the upper palea finally adherent to the grain; stamens 3, styles attached below the apex of the ovary. The grasses of this genus are coarse, with large spikelets, generally somewhat drooping when ripe. The species most known in Great Britain are the *B. erectus*, straight, 2 to 3 feet high; *B. asper*, 4 to 5 feet in height; *B. sterilis*, 1 to 2 feet; and *B. diandrus*, rarely met. Of the *B. secalinus*, or chess proper, specific characters are: a spreading panicle, slightly drooping; spikelets ovate, smooth, of a yellowish green tinge, holding 6 to 10 rather distinct flowers. The stems are erect, smooth, round, 2 to 3 feet in height, bearing 4 or 5 leaves with striated sheaths; joints 5, slightly hairy; leaves flat, soft, linear, their points and margins rough to the touch. This plant is annual, flowering in June and July; but in some cases in which it is cut sooner or otherwise fails to produce seed, it survives, and matures the second year. Chess is a source of annoyance particularly in grain fields, most of all in those of wheat, since it is difficult to separate its seed, having nearly the size but without the plumpness of barley, from the cultivated grains. The notion of many farmers that wheat which has been injured by frost in the autumn or otherwise arrested in its growth is liable to turn to chess, and that of others that the chess grains themselves never grow, are of course wholly without foundation. Some years since the cultivation of chess as a valuable grass for cattle, like millet, lucerne, &c., was recommended by many persons in this country, probably in ignorance of its really worthless quality, and high prices were charged for the seed; whence doubtless arose its present wide diffusion. It has been supposed that by many who thus disseminated the plant it was mistaken for the *B. arvensis*, the only species of brome grass at all suitable for cultivation, but which is itself now wholly displaced by more desirable sorts of grasses. In experiments that have been tried with the chess, cattle have been found to prefer to it almost every sort of fodder, save oat straw and corn stalks. It is the farmer's true interest, indeed, to keep his fields as clear as possible of all the species of brome grass. Among the other species known in the United States are the upright chess (*B. racemosus*), the soft chess (*B. mollis*), declared by some authorities to be poisonous, the wild chess (*B. Kalmii*), the fringed brome grass (*B. ciliatus*), the meadow brome grass (*B. pratensis*), and the field brome grass (*B. arvensis*). From this last the *B. secalinus* is distinguished by the spikelets of the former having fewer florets, and its outer palea being rounded at the summit.

CHICAMACOMICO, N. C., a point on the narrow island beach separating Pamlico sound from the Atlantic ocean, which was the scene of an engagement between a party of confederate troops and the U. S. vessel Monticello, Oct. 5, 1861. The 20th Indiana regiment had their camp at the point named, about 30 m. above Fort Hatteras. A confederate fleet, consisting of 6 steamers, towing schooners and flat boats, all loaded with troops, came out of Croatan sound on the morning of Oct. 4, and landed 1,500 men above the Indiana camp; they then steamed down, throwing shells on shore as they passed, and prepared to land a second body of troops below the camp, thus cutting off a retreat. The Indiana regiment, however, was quicker in its movements, and anticipated the confederates by reaching the Cape Hatteras lighthouse, where it made a stand. Word was immediately sent by the colonel to the U. S. frigate Susquehanna, and the Monticello was despatched to his aid. The latter vessel arrived at the spot indicated on the 5th, and overtook a confederate regiment making its way with precipitation to its boats; the vessel followed up these troops, shelling them on shore, and destroying two boats loaded with those who had succeeded in embarking. With this the effective attack ceased. The confederate loss is not known, but must have been large, as the firing was at very short range.

CHICKAHOMINY, Campaign of the. After the evacuation of Yorktown on the night of May 3, 1862 (see Yorktown, vol. xvi. p. 612), a portion of the confederate army which had formed its garrison proceeded along the York and Pamunkey rivers to White House on the latter stream, while the main body under Gen. Joseph E. Johnston retreated through Williamsburg in the direction of Richmond. On the morning of the 4th the corps of Heintzelman and Keyes started in pursuit. The Union cavalry advance under Gen. Stoneman came up with their rear guard near Williamsburg on the same afternoon, and, after a severe engagement at close quarters, drove it within the strong defensive works erected in front of the town. Soon afterward Gen. Hooker's division of Heintzelman's corps arrived on the ground, and bivouacked for the night about 1½ miles from the confederate lines, while the divisions of Gens. Casey, Couch, and Kearny, which had been greatly delayed by miry roads encumbered with trains, encamped several miles in his rear. The defences of Williamsburg consisted of a series of redoubts stretching from Queen's to Achaershape creek, across the peninsula, about a mile in front of the city, and mounted with heavy guns. At 7½ A. M. of the 5th, Gen. Hooker engaged the confederates nearly opposite Fort Magruder, the largest of the redoubts. Heavy rains had fallen during the previous day and night, and still continued, rendering the roads almost impassable for artillery; but with great exertions Webber's battery was pushed forward to within 350 yards of Fort Magruder, where, in an open plain, exposed to a murderous fire from redoubts and rifle pits, it maintained its position for hours, effectually silencing the guns of the fort. After many of the officers and men had been disabled and nearly all the horses killed, the battery was obliged to retire, leaving 4 of its guns on the field. Meanwhile Hooker's troops, sheltered by woods which skirted the plain in the rear of the battery, maintained a severe struggle with the confederates under Longstreet, who had been strongly reënforced by a portion of Johnston's army already on the retreat beyond Williamsburg, and had between 15,000 and 20,000 men under his command. The confederates advanced 3 times in overpowering force to turn the Union left, penetrating deeply into the woods, and were as often driven back with loss. So severe however was the pressure on the Union line that one of the brigades, exhausted by cold and wet and hard fighting, was finally broken and obliged to retire behind the Excelsior brigade of New York troops, commanded by Col. Taylor. These troops, together with Grover's brigade, stood firm, and when their ammunition was exhausted prepared to meet the enemy with the bayonet. Gen. Heintzelman, who was in command, had meanwhile sent repeated messages to the rear to hasten forward Kearny's division, and at 3 P. M. the leading brigade under Gen. Berry came up, the men having thrown away overcoats and knapsacks in their eagerness to reach the ground. Advancing with loud cheers, they drove the confederates back from the woods where they had begun to gain a foothold, and by their timely arrival saved the exhausted soldiers of Hooker's division from disastrous defeat. Shortly afterward Birney's brigade, also of Kearny's division, came up, and completed the discomfiture of the confederates, who were driven beyond their rifle pits, leaving many dead upon the field. Meanwhile, on the right of Hooker, Gen. Peck of Keyes's corps was actively engaged for several hours with the enemy, and at 5 P. M. the brigade of Gen. Hancock, posted on the extreme right, made a brilliant bayonet charge upon some works on the left of the confederate lines, routing the brigade of Gen. Early and killing and capturing upward of 300 men, with but slight loss. On the left of the Union line the operations under Gen. Emory amounted to little more than a reconnoissance. At nightfall the Union troops lay down to rest in the drenching rain, having advanced their position since the morning; and under cover of the darkness the confederates abandoned their works and many of their guns, and continued their retreat. On the succeeding morning the Union advance under Gen. Jameson, accompanied by Gen. McClellan, occupied Williamsburg, where were found many buildings filled with wounded confederates. The troops of Heintzelman, upon whom fell the brunt of the fighting, lost upward of 2,000 in killed and wounded, while the casualties of those on the right did not exceed 100. The confederate loss is unknown, but probably equalled that of the Unionists.—While these events were taking place, a large portion of McClellan's army, comprising the troops of Sumner and Franklin, proceeded up York river in transports to West Point, where the Pamunkey and Mattapony rivers unite to form the York, and on the afternoon of May 6 were landed on the right bank of the Pamunkey near its mouth. The original plan of the campaign is said to have contemplated a movement up the James river, which would have enabled the army to attack Richmond on the N. or S. side at its pleasure, and to receive its supplies and reënforcements in the immediate vicinity of its base of operations. The presence of the Merrimac in the James, however, interfered with this project, and led to the selection of the York river. On the morning of the 7th Franklin encountered near his landing place a large confederate force commanded by Gens. G. W. Smith and Whiting, and posted in dense woods, from which they poured an annoying fire upon the Union troops. The latter, being inferior in numbers, manœuvred to draw the enemy out upon the open ground, but could effect little until reënforcements were landed and the gunboats in the stream arrived within supporting distance. The confederates, who formed part of the army retreating upon Richmond, then retired, and the positions held by them were immediately occupied by the troops of Franklin and Sumner. The main body of the confederates retired behind the Chickahominy river, which formed the defensive line of Richmond, while that portion which fought at West Point fell back to White House, a station of the Richmond and York river railroad on the Pamunkey, about 20 m. from Richmond. The army of McClellan meanwhile advanced by slow marches from Williamsburg toward Richmond, and the commander-in-chief, finding that the confederates intended to defend the line of the Chickahominy, resolved to make White House his base of supplies, and thence march across the peninsula to Richmond, using the railroad as a means of bringing supplies to his lines in front of that place. On May 10 the cavalry advance under Gen. Stoneman occupied White House, the enemy retiring at his approach, and on the 12th a strong force of Union infantry was concentrated there. On the 14th nearly the whole of the invading army was encamped at Cumberland on the Pamunkey river, about midway between West Point and White House, and 6 m. from the latter place, and on the 16th it moved forward to White House. Thence on the 19th was commenced the grand, concerted movement upon Richmond, the corps of Heintzelman and Keyes, which formed the left wing of the army, marching toward Bottom's bridge, a crossing place of the Chickahominy, 10 m. S. E. of Richmond, over which passes the road to Williamsburg, and the remainder following the York river railroad about 4 m. to Tunstall's station, where the right wing, comprising the corps of Franklin and Fitz John Porter, diverged to the N. W., leaving the centre under Gen. Sumner to follow the railroad. On the 20th the left wing reached Bottom's bridge, and the railroad bridge which crosses the Chickahominy about a mile above; the centre was also on the Chickahominy and in close communication with the left, and the right a few miles N. of the centre, near Cold Harbor, which it occupied on the succeeding day, and where Gen. McClellan established his head-quarters. The confederates offering but slight resistance at Bottom's bridge or the railroad bridge, a strong force under Gen. Naglee, of Keyes's corps, crossed the latter structure, and reconnoitred the right bank of the stream for several miles; while the right wing, after occupying New bridge, over which the road from Cold Harbor to Richmond passes, pushed forward on the 24th to Mechanicsville, a village near the Chickahominy, about 5 m. W. of Cold Harbor. This place was taken by Gen. Stoneman after a smart skirmish, and on the same day the confederates were driven from the vicinity of New bridge toward Richmond, one of their regiments, the 5th Louisiana ("Tigers"), being badly cut up by the 4th Michigan. About the same time Gen. McClellan fixed his head-quarters midway between Cold Harbor and New bridge. On the 24th also Gen. Naglee pushed a reconnoissance westward along the Williamsburg road to a place called the Seven Pines, about 6 m. from Richmond, and during the next 2 days advanced a mile and a half further, establishing a line of pickets from this point across the railroad (which after crossing the Chickahominy runs N. of and nearly parallel to the Williamsburg road) to a house near New bridge known as the "old tavern." On the evening of the 26th the Union lines resembled in form the letter V, one leg of which extended along the Chickahominy from Bottom's bridge, the point of divergence, to Meadow bridge, near Mechanicsville, a distance of about 12 m., and the other from Bottom's bridge to the furthest point reached by Naglee. This line was occupied by the left wing, the main body of which lay around Seven Pines, Casey's division of Keyes's corps holding the most advanced position. The right wing and the centre still occupied the left bank of the river, and the latter body, encamped between New bridge and the railroad bridge, was busily employed in building bridges to afford additional communications with the troops on the other side. The Chickahominy is here a muddy stream, full of quicksands, and for many miles around Richmond is skirted by gloomy swamps, which immediately south of the railroad expand into an area about 10 m. in length by 5 in breadth, known as the White Oak swamp. It extends almost to the James river, and is traversed by a few main roads. The whole belt of country between the river and the city is for the most part woody and swampy, and during the warm season is prolific of miasmatic diseases. Ever since Richmond had been threatened in the previous year the confederates had been engaged in erecting fortifications for its defence, and the besieging army upon arriving on the Chickahominy found the place encircled by a series of strong earthworks constructed in the most skilful manner and mounted with many heavy guns. These defences were most formidable on the N. side of the city, the confederates not anticipating an attack from any other quarter; and so energetically had the work been prosecuted, that subsequent to June 1 little remained to be done. The garrison of Richmond consisted of the army which had retreated from Yorktown, with troops called in from other places, the whole comprising a force perhaps not inferior to that of the besiegers. During the progress of the latter toward the Chickahominy, Norfolk had been abandoned by the confederates (May 10), the garrison retiring upon Richmond, and on the same day the Merrimac, which had so long obstructed the passage of the Union gunboats up the James, was blown up by order of her commander. An expedition, comprising among other vessels the iron-clad Monitor, Galena, and Naugatuck, immediately ascended the river, driving the enemy from the earthworks erected along the lower James, and capturing many guns. On the 17th the 3 iron-clad vessels engaged Fort Darling, a strong work situated on a bluff, 8 m. below Richmond, and which was mounted with a number of heavy rifled cannon. A short distance above the fort the stream was effectually obstructed by two separate barriers formed of piles, steamboats, and various river craft. The Galena, which bore the brunt of the battle, was after 3 hours' incessant firing obliged to retire with her plating pierced in many places by the enemy's steel-pointed balls. The Naugatuck's single gun burst at the 8th discharge, although the vessel itself was uninjured, and the Monitor, which stood 3 hours' fighting without the slightest injury, was unable to elevate her guns sufficiently to strike the fort. By noon the gunboats drew off with a loss of 13 killed and 14 wounded, and no further attempt was made to ascend the river beyond this point. Although the news of the destruction of the Merrimac reached Gen. McClellan before the army had fairly left Williamsburg, he made no change in the plan of the campaign, nor did he show a desire to operate along the line of James river, as is said to have been his original intention. On this subject it is observed in an article published in the *Revue des deux mondes* for Oct. 1862, and ascribed to the prince de Joinville, who accompanied the army as a sort of volunteer aid to Gen. McClellan: "Gen. McClellan ought, immediately after receiving the news of the destruction of the Merrimac, to have abandoned the plan of campaign he had adopted, and by a rapid flank march to have gained the James river, where he could operate in connection with the gunboats. I am now inclined to think this would have been his best move. It is true that the march from the Pamunkey to the James river would have been attended with danger. The passage of the lower Chickahominy or of the James river, should the commander-in-chief have decided to operate on the right bank of that stream, would have proved a difficult and delicate movement in the presence of a large confederate force. But it would have been preferable to keeping the army for a month in their dismal position among the swamps of the Chickahominy."—At daybreak of May 27, Gen. Morell's division of Fitz John Porter's corps, which occupied the extreme right of the Union line, started in the midst of a heavy rain for Hanover Court House, a point on the Virginia central railroad about 15 m. N. of Richmond, the object of the expedition being to destroy the railroad. The advanced guard, comprising a regiment of infantry, with a few cavalry and two guns, encountered the enemy some miles S. of Hanover Court House, and occupied their attention, while several regiments of Gen. Butterfield's brigade took a position which flanked their left wing. The confederates, supposing they had but a small force to deal with, were completely deceived by this movement, and after a few volleys broke and fled in the direction of the village, closely followed by the Union troops, who captured in the pursuit a number of prisoners, guns, and small arms. At the village a portion of the Union troops halted to pull up the railroad track, while a strong force continued the pursuit. At this moment a large reënforcement of confederates approached in the rear, and vigorously attacked the brigade thus separated from the main body. The Union forces maintained their position with great obstinacy until rejoined by the remainder of the division, when a flank movement precisely similar to that executed in the early part of the day was attempted. The enemy were again broken, and took refuge within a dense wood, under cover of which they continued their flight toward Richmond. The victors, after completing the destruction of the railroad and of other valuable property at Hanover Court House, returned to the Chickahominy with more than 600 prisoners, beside several cannon and numerous small arms, having experienced a loss of 350 in killed and wounded. The total confederate loss amounted to 1,500.—During the next few days continual skirmishing went on between the hostile armies, whose positions remained relatively the same; and on the 31st the corps of Keyes and Heintzelman were still the only portion of McClellan's army that had crossed the river. Of these, the former was extended along the Williamsburg road, the advance under Gen. Casey being within 4½ m. of Richmond, and the corps of Heintzelman was at the Seven Pines, 1½ m. in the rear. The whole country occupied by these troops was flat and woody, and in many places swampy. Gen. Sumner's corps, which remained on the left bank of the Chickahominy, had by this time constructed two practicable bridges between the railroad bridge and New bridge. The afternoon of the 30th was marked by one of the severest thunder storms of the season, and the rain, falling incessantly for 10 hours, so swelled the Chickahominy and its numerous small tributaries as to render the passage by the new bridges hazardous, and in a measure to cut off communications between the troops of Keyes and Heintzelman and the main body of the Union army. Under these circumstances the confederate general Joseph

E. Johnston, supposing that he had to deal with no other troops than those of Keyes, determined to crush this corps by an overwhelming attack before the floods should subside sufficiently to allow of succors being brought up. He was apparently unaware that Heintzelman was within supporting distance of Keyes. The plan of battle of Johnston contemplated an attack early on the morning of the 31st by two corps under Gens. D. H. Hill and Longstreet along the Williamsburg road, and simultaneous flank movements on the right and left of the Union position by Gens. G. W. Smith and Huger, the former moving by the New bridge road, and the latter by a road passing 3 m. S. of the Seven Pines, called the Charles City road. The troops however moved slowly over the deluged ground, and Huger became so involved among the swamps through which his route lay, and where his artillery stuck fast for hours, that Longstreet, who commanded the centre, after waiting until midday for intelligence that he had reached his position, decided to commence the attack without him. Huger's troops never got out of the swamps during the day, and took no part in the engagement. The defences with which Casey had strengthened his position consisted of a redoubt and line of rifle pits, with a partially formed abatis some distance in front; and upon these a portion of his men were still at work when the pickets were driven in by the enemy. The 103d Pennsylvania regiment, sent forward as skirmishers, suddenly encountered the united forces of Longstreet and Hill, and were in a moment broken and scattered by a tremendous volley of musketry. Gen. Casey then drew up his division in front of the redoubt and rifle pits, and with 3 batteries commenced a rapid fire of spherical case shot and canister upon the dense columns of the enemy, which opened in long furrows at each discharge. The ranks closed up again rapidly, and so vigorous was the onset that Casey's troops were driven behind their earthworks, from which they further retreated, contesting the ground inch by inch, behind the division of Gen. Couch, drawn up half a mile in the rear of the redoubt, between the Williamsburg road and Fair Oaks station on the railroad. For 3 hours they had withstood an enemy nearly 6 times as numerous, and retired only when they had lost a third of their force engaged, and were in danger of being surrounded. Their camp and several guns necessarily fell into the enemy's hands. Couch for a while withstood the force of the attack, but was finally driven back upon Gen. Heintzelman's corps, which had arrived to the support of Casey and Couch, and was accompanied by Gen. McClellan. At this moment the fresh confederate corps of Smith, accompanied by Johnston in person, appeared upon the field, and Heintzelman, finding himself greatly outnumbered and in danger of being flanked, retired along the Williamsburg road to a short distance beyond the Seven Pines. Couch, however, moving with a single brigade too far to the right, got separated from the main body of his troops, and was for some time in a critical position, exposed to the attacks of Smith, who was endeavoring to turn this part of the Union line. Shortly before 6 o'clock in the afternoon the head of Sedgwick's column, of Sumner's corps, long anxiously awaited by the beaten and disheartened troops of Heintzelman and Keyes, was seen toiling through the mud and rain toward the field. Sumner had received orders at 3 o'clock to bring his corps across the river, and, contrary to the calculations of the confederates, one of the bridges constructed by him was so little injured by the flood as to admit of the passage of Sedgwick's division. The distance to the battle field was less than 5 miles, but the severity of the storm caused the troops to be nearly 3 hours on the march. The other bridge was attempted by Richardson's division and found to be impracticable, and the delay caused by the necessity of marching his troops to the uninjured bridge prevented that general from arriving on the field in time to take part in the battle. Just as Sumner's troops appeared in sight Gen. Johnston was struck from his horse by the fragment of a shell, and for a while utter confusion prevailed on the confederate left, which might have been turned to considerable advantage by the Union generals had they been aware of the fact. Gen. Smith, who assumed the command in chief, leaving a portion of his troops to keep Heintzelman in check, at once prepared to meet the approaching Union reënforcements. Sumner, who accompanied Sedgwick's division, drew up his troops near the handful under Couch, in a line facing S., a little N. of the railroad, and in the vicinity of Fair Oaks station. The confederates soon appeared in their front, and charged with desperate energy up to the muzzles of the few cannon which had been dragged to the spot, but wavered and broke before the incessant discharges of canister. Twice afterward they renewed the attack, and were as often repulsed with frightful loss, the troops of Sedgwick finally driving them at the point of the bayonet within the cover of a thick wood, and retaining possession of the field with all the confederate dead and wounded. Just at dark the division of Richardson came up and took position in front of Sedgwick. Upon learning this disaster the columns which had been engaged with Heintzelman fell back half a mile along the Williamsburg road, Gens. Kearny and Hooker of Heintzelman's corps immediately occupying the ground vacated by them, and both armies bivouacked for the night on the field of battle. Early the next morning, Sunday, June 1, the whole Union line, occupying both sides of the railroad, was simultaneously advanced, and the enemy after a brief resistance retired in confusion through the plundered camps of Casey and Couch beyond Fair Oaks, where the pursuit ceased. The latter position was immediately occupied in force by Sumner, who proceeded to intrench himself, while Heintzelman held the Williamsburg road a short distance beyond the Seven Pines, the confederates having gained about half a mile of ground in the two days' fighting. The several engagements are known in the North as the battle of Fair Oaks, and in the South as that of the Seven Pines. The total Union loss was 5,739, beside 10 pieces of artillery and several thousand muskets; that of the confederates, as stated by themselves, did not exceed 4,233, which is evidently an underestimate. They also lost 1,000 prisoners, including Gen. Pettigrew.—The corps of Keyes, Heintzelman, and Sumner being now firmly established on the right bank of the Chickahominy, the siege may be said to have commenced. The ground occupied by these troops was in wet weather a swamp, and in dry weather a flat plain, dotted at frequent intervals with stagnant pools, the malarious exhalations from which, together with ceaseless labor upon the intrenchments and the numerous roads and bridges which an unprecedentedly wet season rendered necessary, caused unusual sickness and mortality. A perpetual stench of decomposing bodies filled the air, and the water drunk by the troops was in many instances drawn from pools where wounded men had fallen and died, or where the dead had been carelessly thrown by burying parties. Health and spirits alike failed the army engaged under such unfavorable circumstances in conducting the tedious operations of an investment. On June 5, Smith's division of Franklin's corps, previously stationed near New bridge, crossed the Chickahominy and took position next to Sumner on the extreme right of the Union army, where on the 18th of the month it was joined by the remainder of the corps. The besieging lines then presented nearly 4 miles of front to the enemy, the left flank resting on White Oak swamp just S. of Seven Pines, and the right on Golding's farm, an elevated position near the river, about a mile below New bridge. The corps of Fitz John Porter, with the cavalry division of Gen. Stoneman, remained on the left bank of the river throughout the siege, his pickets extending a mile or more beyond Mechanicsville, and his head-quarters being at Gaines's house between Cold Harbor and New bridge. These troops took no part in the immediate operations of the siege, but constituted an army of observation, whose special duty it was to prevent the enemy from turning the Union right wing or getting in their rear and cutting off supplies. On June 18 McCall's division of the Pennsylvania reserve, the only considerable body of reënforcements received by McClellan during the progress of the siege, was added to Porter's command, and took post at Mechanicsville. From the 1st to the 12th of June the operations of the siege went slowly forward, the besiegers gradually lessening the distance between the city and themselves, and preparing to mount the heavy breaching guns in the trenches. On the 13th, however, the monotony of camp life was broken by a daring expedition undertaken by the confederate general Stuart, who, sallying forth from Richmond in the direction of Mechanicsville, with a large force of cavalry and two field pieces, rode completely around the rear of the Union army, his main object being to strike at the supplies collected at White House for transportation to the Chickahominy. At Tunstall's station he fired into a train going toward White House, but could not succeed in stopping it, and the timely alarm given to the small Union force at that place was the means of preserving an immense amount of government stores. Stuart, however, succeeded in destroying several hundred thousand dollars' worth of property at Tunstall's station, and, laden with booty, recrossed the Chickahominy on the 14th, some distance below Bottom's bridge, and returned in safety to Richmond.—The success of this expedition, by demonstrating the ease with which the supplies of the army, which had hitherto been brought wholly by railroad from White House to the Chickahominy, could be cut off, seems to have afforded Gen. McClellan the first intimation of the danger of his position, and of the necessity of strengthening his railroad communications or of adopting another line of operations. About this time also the signal officers reported the daily arrival in Richmond of large reënforcements, a portion of which consisted of the army of Gen. Jackson, which, after driving Gen. Banks down the Shenandoah valley, and baffling the attempts of Gens. Fremont, Shields, and McDowell to capture it, succeeded in entering the beleaguered city. It is supposed also that portions of Beauregard's army from Mississippi arrived there about the same time. Continual skirmishing meanwhile ensued between the armies, the confederates gradually showing a disposition to feel the strength of the Union outposts preparatory to some decisive movement; and on the 25th a severe action, known as the battle of Five Oaks, was fought in front of Heintzelman's position on the left centre for the possession of a swamp between the hostile lines. The victory remained with the Union troops, though at a cost of upward of 600 men, and their lines were advanced to a dry and healthful position beyond the swamp. Already, however, McClellan, seriously alarmed for the safety of his army thus menaced in flank and front by a superior force, and not only cut off for the present from any prospect of reënforcements, but daily depleted by disease and fatigue, had decided to transfer his base of operations by a flank movement through White Oak swamp to the James river; and on the 25th, while the battle of Five Oaks was raging on the left, the troops of Fitz John Porter at Mechanicsville were employed in a series of manœuvres to entice the enemy upon the left bank of the Chickahominy, under the apprehension that Gen. Lee, who was now in command at Richmond, might endeavor to turn both flanks or crush the centre of the main body of the Union army. Meanwhile, on the 24th, peremptory orders were sent to White House to stop the landing of stores from the transports, of which nearly 800 were lying in the Pamunkey, and to despatch those already landed with all possible rapidity to the Union left wing in front of Richmond. The transports which had not yet begun to unload were at the same time directed to proceed to City Point on the James river, 34 m. below Richmond; and from the 25th to the evening of the 27th trains were kept running as swiftly as possible to the Chickahominy, laden with munitions of war of every description. On the night of the 27th the last train from the Pamunkey passed safely through, and the last return train arrived at White House on the morning of the 28th. At noon on the latter day the whole fleet of transports were under way for Fortress Monroe, where, convoyed by gunboats, they arrived in safety on the succeeding day. So thorough had been the work of removing the immense stores collected at White House, and of destroying those which could not be removed, that at the departure of the transports nothing but the camp grounds and a quantity of rubbish was left to the enemy. —As a means of drawing the confederates over to the left bank of the Chickahominy, McCall's troops, previously stationed at Mechanicsville, were on the 24th removed to the left bank of Beaver Dam creek, a small affluent of the Chickahominy, and posted at Ellison's mill, about 1 m. S. W. of Mechanicsville, where they were protected by a series of intrenchments and rifle pits. The confederates, either fathoming the intention of McClellan to change his base of operations, or intent upon carrying out some project of their own, busied themselves on the 25th with building two bridges in the vicinity of Mechanicsville, over which by 2 o'clock on the afternoon of the 26th a large body of troops under Gens. Longstreet and A. P. Hill had passed. These marched straight upon the position of Gen. McCall, and so sudden was their attack that the Pennsylvania regiment of "Bucktails" was surprised while on picket duty and several of its companies cut off. Gen. Porter had a few hours previous commenced the movement which was destined to transform the besiegers into a retreating and hard-pressed army, by sending his whole wagon train across the Chickahominy by the Woodbury bridge, a structure communicating with the right wing of the besieging army, nearly opposite Golding's. The confederates then fell furiously upon McCall's troops, but were foiled in every attempt to flank them or pierce the centre of the Union line. Late in the afternoon Morell's division of Fitz John Porter's corps came up to the assistance of McCall, and after a severe action lasting until after dark the enemy were driven back at all points, and both armies rested on their arms. At 3 o'clock on the morning of the 27th the confederates, who had been strongly reënforced during the night, were on the move, and Porter, in accordance with McClellan's orders, began slowly to fall back toward his camp at Gaines's house, to the eastward of which he drew up his troops, comprising about 20,000 men with 60 guns, in a line of battle extending from Cold Harbor to the river, a distance of nearly 2½ m. The enemy followed in the traces of the Union troops, and at 1 o'clock P. M. advanced against them in 3 columns, directed respectively against the centre and the two wings. Within an hour the battle became general along the whole line, which was speedily enveloped in dense clouds of smoke from upward of 150 pieces of cannon placed in battery on either side. An attack upon the Union centre shortly after 3 o'clock was repulsed with great slaughter; but the superiority of the enemy in numbers now became so apparent, that portions of Sumner's and Franklin's corps were sent across the river to the assistance of Porter. Shortly afterward a powerful column moved down the hill on which stands Gaines's house against the Union left wing, where McCall's division was posted. The artillery played with terrible effect upon the dense ranks of the confederates, opening wide chasms at every discharge; but they marched on with an almost incredible resoluteness, and fell with such force upon the exhausted division of McCall that the line was broken and the troops scattered beyond rallying. The right wing at the same time fared equally ill, and the centre was compelled to fall back to avoid being flanked. The confederates, following up their advantage, charged with impetuosity upon the broken ranks of the Union troops, who were soon in full retreat toward Woodbury bridge, over which in the course of the night they all safely crossed to the right bank of the river, destroying the bridge behind them. Their loss in killed and wounded was probably less severe than that of the enemy, but the latter secured a number of cannon and small arms, besides many prisoners and all the sick and wounded in the hospitals. In this action, which is known as the battle of Gaines's hill, the confederates are supposed to have numbered 60,000 men, while not more than 35,000 Union troops, including the reënforcements, were under fire, and of these a portion arrived on the ground only in time to cover the retreat. The main object of Gen. Porter in giving battle, however, was to enable the trains on the other side of the river to move off to the James, which was fully accomplished. One of its results was to separate from the main body of the Union army Gen. Stoneman's command, which was absent in the direction of Hanover Court House, and which, after proceeding to White House, marched down the peninsula to Yorktown, and subsequently joined McClellan on the James river. A body of the enemy also proceeded to White House after the battle of Gaines's hill, but found only the debris of the late encampment and smouldering embers of the fires which had destroyed the remaining stores.

On the right bank of the Chickahominy, on the 27th, an attack upon Franklin's intrenchments at Golding's farm was brilliantly repulsed by Hancock. The trains also began to leave for the James river, and during the night of the 27th and the morning of the 28th all the bridges were destroyed. Artillery was also posted at the fords to prevent the passage of the confederates, who still remained in force on the left bank. The chief military incident of the 28th was a renewed attack on Franklin's position at Golding's, in which the enemy suffered even more severely than on the previous day, leaving a number of prisoners in the hands of the Union troops. Preparations meanwhile went swiftly on for the departure of the army trains, and all along the lines the troops were employed in destroying such stores as could not be removed. Shortly after noon several thousand wagons, including ambulances loaded with wounded and the siege train, together with 2,500 head of cattle, were on their way to White Oak swamp, through which passes the main road to the James river. An immense number of sick and wounded soldiers, stragglers, and camp followers of all kinds, followed on foot, and the whole train was convoyed by portions of the corps of Fitz John Porter and Keyes. At about 1 o'clock on the morning of the 29th the troops of the besieging army quietly evacuated their earthworks, and marched in the direction of Savage's, a station on the railroad about midway between the bridge and Fair Oaks. Here was the principal hospital of the army, and notwithstanding the large number of its inmates who had crawled away with the departing trains or been removed in ambulances or wagons, the sheds and tents were filled to overflowing with sick and wounded whom exposure and battle had rendered helpless. These it was found necessary to leave in the possession of the confederates. The latter, suspecting the movement of the Union troops, were early on the alert to harass their march, and Sumner's corps had proceeded no further than Peach Orchard station on the railroad, a mile E. of Fair Oaks, when it was threatened at daybreak by a large force advancing from Richmond by the Williamsburg road. The Union line was skilfully drawn up under cover of a wood with the batteries masked, and the confederates were received with a murderous fire of artillery and musketry, which rapidly thinned their ranks. Every attempt to flank the Union line was successfully repelled, and Sumner, having held his position until he supposed the trains were far advanced through White Oak swamp, retired leisurely upon Savage's. This combat, known as the battle of Peach Orchard, was manifestly to the disadvantage of the confederates, who lost probably not fewer than 1,500 in killed and wounded, while the Union loss did not exceed 150. At 4 o'clock in the afternoon Sumner joined Franklin, who was drawn up in line of battle near Savage's, and an hour later the confederates appeared in force in their front. A severe battle ensued with varied success, and at nightfall the confederates retired with heavy loss, leaving many prisoners in the hands of the Unionists. These, however, as well as the dead and wounded of the Union army, had to be left behind, the exigency of the occasion not admitting of the delay which would be caused by their removal. At midnight the tired troops of Franklin and Sumner resumed the march toward the James river, Franklin covering the retreat; and at daylight of the 30th no Union soldiers, save the inmates of the hospital at Savage's and a few stragglers, remained N. of the Williamsburg road. The route of retreat ran in a S. W. direction through the swamp to White Oak bridge over a small creek of that name, about 6 m. from Savage's, and thence nearly due S. to Turkey island bend on the James river, 6 m. further. At an early hour in the morning the last of Franklin's corps were over the bridge, which was then destroyed, and the exhausted rear guard sought a few moments' rest. The position was too critical, however, to allow them any other than a brief respite. In front of the bridge the confederates were concentrating in heavy force under cover of woods and on the slopes of a steep hill, where their batteries were masked in a favorable position for opening upon Franklin. The Union front under Fitz John Porter was pushing on toward the James river, and along the whole line almost every available foot of ground not occupied by the troops was covered by the wagon trains and by throngs of wounded soldiers and stragglers. In addition to the demonstration of the enemy at White Oak bridge, there was danger of side attacks from the direction of Richmond all along the line, and particularly by the Charles City road, which forks with White Oak swamp road at a place called Charles City cross roads, about 2 m. below the bridge. At the latter position a furious cannonade was commenced by the enemy shortly before noon, under cover of which they made repeated attempts to cross the creek, but were as often driven back with severe loss. So vigorous was the defence of Gen. Smith, whose division bore the brunt of this attack, that at nightfall the enemy's guns were completely silenced, and the rear of the Union army secured from any further serious molestation. On the Charles City road an equally severe contest raged, in which portions of the corps of Porter, Heintzelman, and Sumner bore a part; but by evening the confederates were repulsed at all points, and a safe line of retreat opened to the Union army, which by sunrise of July 1, was concentrated on a vast undulating field called Malvern hills, rising in a gentle slope from the James river, a short distance above Turkey bend. The Union line formed almost a semicircle, Keyes holding the extreme right and Fitz John Porter the extreme left, with Couch on his right. In front the artillery, including many heavy siege guns, was posted so as to sweep the field, and in the rear lay the Galena and other gunboats in the river, prepared to support the army in any emergency. The position was further strengthened by some hastily erected earthworks. It was not until 4 o'clock in the afternoon that the confederates, commanded on this occasion by Gen. Magruder, began to debouch from the cover of the woods upon the plain in front of the Union lines; and unfortunately for the confederate leader, he directed his attack against the Union left wing, which was the strongest part of the whole line. Column after column was marched up against the troops of Porter and Couch, only to be mowed down in whole ranks by the fire of the artillery and of the gunboats, whose heavy pieces, discharged from a distance of 2½ m. by means of signals, could be distinctly heard above the roar of the battle. At one time the left seemed so hard pressed by overpowering masses of the enemy that some troops were sent from the centre to its support. Here the confederates were finally repulsed with frightful loss, losing guns and colors, and leaving their dead piled up in some places breast high. At dusk Magruder drew off his shattered columns from what the prince de Joinville designates a "useless butchery," and the field remained in the possession of the Union army. The position at Malvern hills being considered untenable, Gen. McClellan ordered a further retreat to Harrison's Landing, 7 m. lower down the river and 17 m. from Richmond, and during the whole of the 2d the army was slowly moving in the midst of a cold rain storm toward that point, arriving in safety at nightfall. The transports which had come around from the Pamunkey, and were lying in the stream, awaiting its approach, were at once unloaded, and the sick and wounded, whose sufferings had been very severe during the march, properly cared for. Defensive works were also erected, and by the evening of the 3d, at which time the rain had ceased, the army occupied a strong position, covered by the gunboats, and supplied with abundant resources against any attack. The confederates made a slight demonstration toward the close of the day, but were driven back with the loss of a battery and numerous prisoners. The losses during the retreat are officially stated by Gen. McClellan at 1,565 killed, 7,711 wounded, and 5,958 missing, a total of 15,234; and the entire loss from May 20 to July 3, by the casualties of war and by sickness, discharges, and resignations, amounted probably to 50,000 men, so that the effective strength of the army on the latter date was under 60,000. Of public property destroyed or abandoned no exact estimate can be made, but the amount was inconsiderable in comparison with the difficulties attending its removal. The trains, with the exception of a few wagons which broke down and were abandoned after their contents had been destroyed, arrived at Harrison's Landing by different routes in perfect safety, and all the siege guns but one were brought into camp. The losses of the confederates, in the absence of any official report, can only be estimated. In killed and wounded they equalled if they did not surpass those of the Union army, the carnage at Malvern hills in particular telling against them. In the number of prisoners taken, however, they had considerably the advantage of their adversaries. On July 4 McClellan reviewed his troops, to whom he issued the following address:

> "HEAD-QUARTERS ARMY OF THE POTOMAC,
> "CAMP NEAR HARRISON'S LANDING, July 4, 1862.
>
> "SOLDIERS OF THE ARMY OF THE POTOMAC!—Your achievements of the last ten days have illustrated the valor and endurance of the American soldier. Attacked by superior forces and without hope of reënforcements, you have succeeded in changing your base of operations by a flank movement, always regarded as the most hazardous of military expedients. You have saved all your material, all your trains, and all your guns, except a few lost in battle, taking, in return, guns and colors from the enemy. Upon your march you have been assailed day after day with desperate fury, by men of the same race and nation, skilfully massed and led. Under every disadvantage of number, and necessarily of position also, you have in every conflict beaten back your foes with enormous slaughter. Your conduct ranks you among the celebrated armies of history. No one will now question that each of you may always with pride say, 'I belong to the army of the Potomac.' You have reached the new base, complete in organization and unimpaired in spirit. The enemy may at any time attack you. We are prepared to meet them. I have personally established your lines. Let them come, and we will convert their repulse into a final defeat. Your government is strengthening you with the resources of a great people. On this, our nation's birthday, we declare to our foes, who are rebels against the best interests of mankind, that this army shall enter the capital of the so-called confederacy; that our national constitution shall prevail, and that the Union, which can alone insure internal peace and external security to each state, 'must and shall be preserved,' cost what it may in time, treasure, and blood.
>
> "GEORGE B. MCCLELLAN."

On the 9th of the month President Lincoln made a visit to Harrison's Landing; and on the 26th Gen. Halleck, then recently appointed general-in-chief, accompanied by Gens. Meigs and Burnside, arrived there and held a long conference with Gen. McClellan, the object of which was to devise a plan for extricating the army from its position. Its condition had not improved since the retreat from Richmond, and such were the inroads which disease was making in its ranks that there was danger, unless it were speedily removed to a more healthful place, that it might be reduced to an enfeebled and ineffective remnant. A retreat down the left bank of the James river to Yorktown and Fortress Monroe was decided upon; and for the purpose of diverting the attention of the enemy from McClellan, Gen. Pope, with all the available force around Washington at the disposal of the government, was ordered to move forward from Washington toward the Rapidan. A reconnoissance in force to Malvern hills by the division of Gen. Hooker on Aug. 5 was the last affair of importance on the peninsula. The confederates were driven away with loss, and the Union troops returned soon after to Harrison's Landing. At the latter place preparations went busily forward for removing or destroying the stores of all descriptions collected there, and on the 14th the advance guard of the retreating army, comprising the corps of Fitz John Porter, started for Yorktown, where within the next week the whole army arrived in safety, having experienced no molestation on the way. From Yorktown the army, with the exception of Gen. Keyes's command, was conveyed to Alexandria, and the greater portion took part in the important movements of Aug. 25–30 between the Rappahannock and Washington.

CHINCH BUG, a small hemipterous insect, of the family *cimicidæ*, and probably of the genus *cimex*, which during a few years past has frequently appeared in immense numbers in certain portions of the United States, but especially in parts of the southern and southwestern states, upon growing wheat, Indian corn, and other grains, and even upon the grass of meadows and pastures, occasioning wide-spread and often complete destruction of those crops. These bugs, though commonly of different colors, as black, red, or gray, and of somewhat different sizes, even in the same locality or field, are more frequently black with white or light wings; while they are very compact, and both in form and the usual size, as well as in the odor they exhale, bear a close resemblance to the bedbug or chinch (*C. lectularius*), from which they have taken their name. They appear to be hardy, and, though capable of flying, seldom take to the wing, but creep or run rapidly on the ground. Upon a crop, they are generally found sticking thickly over the surface of the plants near the ground, though they sometimes cover all parts of the stalks of corn, finding their way even into the bud. They are often so thick upon the stems as completely to blacken the parts they are on; and clustering on the leaves, they bend these by their weight, presenting somewhat the appearance of a swarm of bees. Their action appears to be in the way of sucking out the juices and substance of the plants, so that a stem attacked by numbers of them soon withers, and, if of the small grains, falls to the ground. On following the scythe or reaper in a field which they have infested, they may be seen on the ground in millions, running in all directions to hide themselves. Those about the borders of a field of wheat when thus disturbed escape into and attack the neighboring corn, oats, grass, or other later crop. They have been observed in such cases to advance during 24 hours some 15 to 20 yards into the adjoining crop, destroying it as they proceed. It is said that no attempt thus far made to arrest their attacks has proved successful. Having their wings full-formed from a few hours after being hatched, if ditches are dug round a field they fly over them. It has been suggested that among the earlier grains, in districts they infest, clover or other tender grasses should be sown, so as to keep them in food while the neighboring corn or oats is allowed to mature. Among remedies proposed, have been those of burning the crop they have attacked with them, in order to stop their further devastation; and of digging ditches about the crops not yet infested, filling with straw on which they collect in passing, and burning this, and repeating once or oftener the same day. It is further declared that these bugs are natives of the forests, and that if occasionally exterminated in their haunts in these, as can be done by collecting and burning the leaves and rubbish of all woods in the vicinity of grain fields, and also the stubble or stalks on which they may remain after removal of a crop, they are thus so far kept down as to be of no real damage for a few years; while if the former precaution be repeated often enough, the district so treated may be effectually rid of these pests. Many articles relating to the chinch bug will be found in Ruffin's "Farmer's Register," especially in the 7th volume.

CHOLESTERINE (Gr. *χολος*, bile, and *στερεος*, firm, solid), or BILIARY FAT, a non-nitrogenized organic substance, found in the bile and in other fluids or situations in the human body, or that of animals in which the biliary secretion is prominent, this substance when separately obtained having the appearance of spermaceti, and differing from ordinary fats only in the fact that it refuses to form a soap with caustic alkalies, even under the action of prolonged heat. In this respect it agrees with seroline, also found in the blood, and with a few other substances, all of which have been classed by Lehmann under the name of lipoids. Cholesterine is neutral, inodorous, insoluble in water, soluble in ether and hot alcohol. Its composition is usually represented by the formula $C_{25}H_{22}O$. It burns with a bright flame, and like seroline gives with strong sulphuric acid a peculiar red color. It crystallizes in very thin, colorless, transparent, rhomboidal plates, frequently marked by a cleavage at one corner in a line parallel with the corresponding side, and often forming in layers, the borders of the subjacent plates showing very distinctly through those above. Cholesterine was discovered in 1782, by Poulletier de la Salle, in biliary calculi; its presence in the blood was shown in 1830 by Denis. Seroline, closely related to it, was discovered in the blood by Boudet in 1833. In a condition of health, cholesterine exists in the bile, blood, liver, brain and nerves, and the crystalline lens. It is also found in very large quantity in the meconium, in the fæces of animals hibernating, and by some authorities it is said also in the fæces generally in health. It occurs frequently as a morbid deposit or product. Biliary calculi consist wholly of cholesterine, coloring matter, and mucus. The tablets of cholesterine are found in or obtained from cancerous growths, encysted tumors, and atheromatous deposits in the coats of the arteries, and sometimes as forming distinct deposits or tumors in the substance of the brain. Cholesterine is obtained also from the fluid of hydrocele, of ovarian cysts, of tubercle in the crude state, and from pus. Its quantity in the normal fluids is small, forming, according to Berzelius, 1 part in 1,000 of the bile in man, and according to a recent analysis by Prof. Austin Flint, jr., of New York, only .618 in 1,000. The analyses of the latter give as the proportion in 1,000 parts, for the venous blood of the male, .445 to .751; for the meconium, 6.245; for the human brain (in two instances in which death was sudden), 7.729 to 11.456. The bile and some other fluids can hold the cholesterine in solution, though by aid of what other constituent is not known; while it may perhaps exist, in organic union with other components, in the nervous substance and the crystalline lens. While the chemical relations of cholesterine had been fully studied, its physiological relations long remained in doubt, or the subject at the most of conjecture. In their works on physiology, or editions of them issued since 1853, Carpenter, Lehmann, Mialhe, and also Prof. J. C. Dalton of New York, had more or less distinctly asserted the probability that cholesterine is a product of the breaking down of the substance of brain and nerves, during performance of their functions, and that it is thenceforward an excrementitious substance, to be cast out of the system by action of the liver, or at most (as its highly combustible character would suggest) to combine with oxygen for the production of animal heat. No very certain grounds were presented for the adoption of these opinions. With a view to arrive at a better understanding of the functions of the liver, the relation of the bile to conditions of health and disease, and among the rest the physiological significance and offices of the cholesterine, Professor Flint commenced in 1860–'61, and has continued, a series of experiments connected with the secretion and action of the bile in dogs, together with analyses of this fluid, of the human bile, blood, &c.; and while reserving his general conclusions relative to the bile, he has presented his results obtained in connection with the study of cholesterine, in a long paper in the "American Journal of the Medical Sciences" (Oct. 1862). Referring the reader to this paper for the author's experiments and reasonings on the subject, there will further be presented here only an abstract of the conclusions reached. Cholesterine is constantly forming in the system, being always present in the nervous matter and the blood, but by far the most abundant in the former; it is a necessary product of the waste of the nervous matter, and being removed thence in the circulation constitutes one of the most important of the materials to be excreted from the body. It is separated from the blood by the liver, appears constantly in the bile, and in this is poured into the alimentary canal. As in the case of urea, the most important excreted matter of the kidneys, so with cholesterine, if its separation and removal through the liver ceases, or is not in due amount, this product accumulates in the system, producing its form also of poisoning or deterioration of the blood, and leading to a corresponding class of diseases. Thus the bile has two distinct functions answering to the presence of two entirely distinct components in it. One of these embraces the glyco-cholate and tauro-cholate of soda, which do not preëxist in the blood, and so do not accumulate in it when the liver is torpid or its action arrested; these are produced in the liver, serve a useful purpose in completing the process of digestion, are not discharged in the fæces, and constitute a secretion only. The other function of the liver is the depuration of the blood by freeing it of excess of cholesterine; and to this end probably it is that secretion of bile continues in the intervals of digestion, though more abundant during the digestive acts. The ordinary fæces, according to Prof. Flint, do not contain cholesterine, but contain "stercorine"—the substance thus named by the author being invariably found by him in the normal fæces, and regarded by him as identical with that previously found in minute quantity (.02 to .025 part in 1,000) in blood, and named seroline. The transformation of cholesterine to stercorine occurs during the digestive process; and that it does not take place before digestion commences, nor when it is for the time arrested, accounts for the presence of the former only in the meconium and the excrement of animals hibernating. Stercorine is therefore the form in which cholesterine is discharged from the body. The facts explain the distinction of the two types of jaundice. In the mild type, the bile is formed, but its discharge being obstructed, its coloring matter chiefly is reabsorbed, and the disease is attended with yellowness of the skin, but is comparatively harmless; in the other, the grave symptoms and almost invariably fatal character are due to cessation of the action of the liver, with retention of cholesterine in the system. There is also a condition of the blood, which may or may not be attended with jaundice, due to a gradual and undue accumulation of cholesterine in that fluid, and to which Prof. Flint applies the name "cholesteræmia." This can only occur when, through some organic or structural change in the liver, and not merely of a small part, but of so much of it that the remaining healthy portion, if any, is insufficient for the depuration of the blood, the organ is in consequence incapable of performing duly its excretory office. In simple jaundice, the fæces lack not only the color imparted to them by the changed bile, but are without stercorine also; in jaundice with cholesteræmia, the stercorine is usually found in diminished quantity, showing that some bile is still formed and discharged. It is to be inferred that after a brief continuance of the severer form of jaundice, the presence of stercorine must be wholly wanting. These views thus appear to throw new light on the functions of the liver and the nature and purposes of the bile, to explain more precisely the character and origin of the diseases referred to, and not less to account for the long inexplicable disorder of the health vaguely associated with a "bilious" condition or "torpid liver," as well as for the benefits arising from duly maintaining or restoring the biliary secretion. (See Bile, and Jaundice.)

CLARK, Charles, a general in the service of the confederate states, born in Mississippi, joined the 2d regiment of Mississippi volunteers during the Mexican war, was chosen captain in Jan. 1847, and on the resignation of Col. Reuben Davis in October was elected colonel. In 1861 he entered the southern army and was appointed a brigadier-general.

CLOUGH, Arthur Hugh, an English author, born in Liverpool, Jan. 1, 1819, died in Florence, Nov. 13, 1861. He was educated under Dr. Arnold at Rugby, gaining all the highest honors of the school, and at Baliol and Oriel colleges, Oxford. In the latter he obtained a tutorship, but differing in his theological views from both currents of opinion at the university, he resigned about 1848. It was during his residence at Oxford that he wrote his best and most popular poem, "The Bothie of Tober-na-Vuolich, a Long Vacation Pastoral" (1848), in which he relates, in musical hexameters, full of intentional imitations of Homer and Goethe, the adventures of an Oxford reading party in the Scotch highlands. It was reprinted in America (Cambridge, 1849), and was better received here than at home. In 1848–'9 Mr. Clough was on the continent. He remained in Rome during the siege of that city by the French, gained the friendship of Saffi and other Italian liberals, and returned home through Switzerland. Some of his impressions of art, politics, and religion at Rome were embodied in his "Amours de Voyage," a story in verse which first appeared in the "Atlantic Monthly" in 1858. Soon after his return to England he was made principal of University hall and professor of the English language and literature at University college, London. Resigning this appointment in 1852, he came to America, settled in Cambridge, Mass., as a teacher, wrote for the "North American Review," and made a revision of the translation of Plutarch's "Lives" known as Dryden's (6 vols., Boston, 1859). In July, 1853, he was induced to return to London by the offer of a place in the education office of the privy council. To the duties of this post he added, shortly after the close of the Crimean war, those of secretary to a commission appointed by government to examine the military systems of some of the chief continental nations. At the time of his death he was travelling for the benefit of his health. His principal production, beside those already mentioned, is a series of tales under the title of "Mari Magno," written a few months before his death. A collection of his poetical writings was published in 1862 in London and Boston, the latter edition with a memoir by Charles E. Norton.

CLUSERET, Gustave Paul, brigadier-general of volunteers in the U. S. army, born in Paris, France, June 13, 1823. He entered the military school of St. Cyr in 1841, and in 1843 became sub-lieutenant in a regiment of the line commanded by his father. For 4 years he taught fortification, topography, tactics, and strategy; in Jan. 1848, was promoted to be 1st lieutenant; and in April of the same year became a major in the *garde mobile*. During the revolution of June he commanded a column in the rue St. Jaques under Gen. Damesme, and was wounded. In July he was made a chevalier of the legion of honor. He was retired from active service in Jan. 1849; and soon afterward put upon half pay by President Louis Napoleon, on account of his republican opinions. He then opened a painter's studio, but after about two years returned to the service as lieutenant in a battalion of *chasseurs à pied* in Algeria. Here he took part in various expeditions, and was after a time charged with the preparation of the *Dictionnaire historique et géographique de l'Algérie*. In 1854 he was ordered to the Crimea, where he shared in some of the hardest fighting, was twice wounded, and won promotion to a captaincy at the Mamelon Vert. He returned to France in 1856, joined the expedition against the Kabyles in 1857, and at the close of the campaign was recommended for the decoration of officer of the legion of honor, and appointed imperial commissioner at the first council of war, sitting at Blidah. In 1858 he resigned his commission, but on the outbreak of the Italian war he joined the staff of Garibaldi with the rank of major in the Italian army, and was soon afterward placed in command of the French legion. He was wounded at the siege of Capua, and two days afterward received the brevet of colonel (Nov. 1, 1860). In Sept. 1861, he offered his services to the U. S. government, and arrived at Washington in Jan. 1862. Appointed aide-de-camp to Gen. McClellan with the rank of colonel, he was soon afterward assigned to duty with Gen. Fremont, who placed him in command of his advance guard. He was engaged at the battles of Strasburg, Harrisonburg, and Cross Keys, and for his gallantry in the last named engagement was made brigadier-general of volunteers, Oct. 14. After the retirement of Gen. Fremont he commanded a detached body of Gen. Sigel's force, and on his promotion was ordered to report to Gen. Milroy in western Virginia.

COCHRANE, John, brigadier-general of volunteers in the U. S. army, born at Palatine, Montgomery co., N. Y., Aug. 27, 1813. He was graduated at Union college, was admitted to the bar, practised his profession for several years in the valley of the Mohawk, removed to New York city in 1846, became a leader of that branch of the democratic party popularly called "Barnburners," and during the administration of President Pierce (1853–'7) was surveyor of the port of New York. He was elected a representative in congress in 1856, 1858, and 1860. In March, 1861, he visited Richmond to confer with the Union members of the Virginia convention, and in August took the field as colonel of the 1st regiment U. S. (volunteer) chasseurs, which he commanded at Fair Oaks, Malvern hills, and other battles of the Chickahominy campaign. He was commissioned brigadier-general of volunteers July 17, 1862, and assigned a command in Gen. Couch's division of the army of the Potomac. He was with the reserve at the battle of Antietam, and afterward pursued the retreating enemy.

COCKE, Philip St. George, a general in the service of the confederate states, born in Virginia, shot himself at his residence in Powhatan co., Va., in Dec. 1861. He was graduated at West Point in 1832, and appointed brevet 2d lieutenant in the 2d artillery, of which he was adjutant in 1833–'4. He resigned in April, 1834, was appointed brigadier-general in the southern army at the commencement of the civil war in 1861, and took part in the first battle of Bull run. It is not known whether he killed himself by accident or design.—The subject of this notice is not to be confounded with Philip St. George Cooke, who was appointed brigadier-general in the U. S. regular army, Nov. 12, 1861. (See Cooke, vol. v. p. 658.)

COLENSO, John William, D.D., an English prelate and author, born in 1814. He was graduated at St. John's college, Cambridge, in 1836, became a fellow of his college, took orders in the established church, was assistant master of Harrow school from 1838 to 1842, held a tutorship at St. John's college from 1842 to 1846, and then became rector of Forncett St. Mary, Norfolk, where he remained until 1853. He has written several mathematical text books for schools and universities which have attained a large sale, and published a volume of "Village Sermons" (1853); an edition of "The Communion Service, with selections from the writings of the Rev. F. D. Maurice" (1855); and a "Journal of a Ten Weeks' Tour in Natal" (1855). He was consecrated bishop of the new see of Natal, S. E. Africa, in 1853. Here he prepared a Zooloo grammar and dictionary, advocated the retention of polygamy among new converts from heathenism in a "Letter to the Archbishop of Canterbury" (1860), published "The Epistle to the Romans newly translated and explained from a Missionary Point of View" (1861), and applied himself to the task of translating the whole Bible into the Zooloo tongue, in the course of which he was led to deny the verbal inspiration and historical accuracy of several books of the Old Testament. The grounds on which he founds this denial are given in his work entitled "The Pentateuch and Book of Joshua critically examined" (London and New York, 1862).

COLORADO TERRITORY. See Pike's Peak, vol. xiii.

COLUMBUS, a village of Hickman co., Ky., on the Mississippi river, 18 m. below Cairo; pop. in 1860 about 1,000. It is the northern terminus of the Mobile and Ohio railroad, and is now (Dec. 1862) an important depot of military stores for the U. S. forces in S. W. Tennessee and Mississippi. The village stretches along the river, a broad roadway intervening between the declivity of the shore and the single row of buildings which mainly constitutes the town. Immediately north of the village, at the foot of a gentle bend in the channel, which here comes down from the N. W., rises a bluff some 200 feet high, and level at the top, extending about a quarter of a mile along the shore, and spreading out into the country behind. This is the first elevation below Cairo on the shores of the Mississippi, which are generally flat, liable to overflow at high water, and thickly wooded. This bluff perfectly commands the channel, and is thus a military position of the first consequence. Soon after taking command at St. Louis in Aug. 1861, Gen. Fremont urged upon the U. S. government the importance of placing a garrison at Columbus, but his advice was not adopted. On Sept. 4, 1861, the place was occupied by Gen. Polk of the confederate army, who constructed an extensive intrenched camp on the bluff, and also built batteries along the water and on a shelf of earth half way up the face of the precipice to command the approach from the direction of Cairo; as a further obstruction to navigation, two ponderous chain cables were stretched across the river by Gen. Pillow, Gen. Polk's second in command, and made fast to each shore. Numerous torpedoes were also sunk in the channel to blow up hostile vessels. The cables broke of their own weight, and their remains were visible on the Kentucky shore for months afterward. The national gunboats repeatedly approached the place while thus occupied, but made no attack upon it; and the battle of Belmont, fought opposite to it, on the Missouri shore, Nov. 7, 1861, was in no manner decisive. But after the capture of Forts Henry and Donelson it had plainly become untenable by the confederates, and was finally evacuated March 2, 1862, and occupied by the Union forces next day, who found considerable quantities of ammunition and many cannon of large caliber.

CONRAD, Charles M., a representative of Louisiana in the confederate congress, born in Winchester, Va., about 1803. His family removed to Mississippi while he was an infant, and afterward to Louisiana. He was admitted in 1828 to the bar in New Orleans; was a whig in politics, and was repeatedly elected to the legislature; became a member of the U. S. senate in 1842, to fill a vacancy caused by the retirement of Alexander Morton, his term of office expiring March 4, 1843; was a member of the convention to revise the state constitution in 1844; and was elected a representative in congress in 1848, but resigned in Aug. 1850, being appointed secretary of war by President Fillmore. Going out of office March 4, 1853, he lived in retirement until after the secession of Louisiana, when, having embraced the southern cause, he was chosen to represent the 4th district in the confederate congress.

COOK, John, brigadier-general of volunteers in the U. S. army, born in Belleville, St. Clair co., Ill., June 12, 1825. He was left at an early age an orphan with a large fortune, entered the Illinois college at Jacksonville, but was not graduated, and made his first appearance in public life in 1855 as mayor of Springfield, Ill. He was chosen colonel of the 1st Illinois volunteers in April, 1861, and for gallantry at the capture of Fort Donelson, where he commanded a brigade, was made brigadier-general, March 22, 1862. In May he was placed in command of a camp of instruction at Cloud's Mills, Va. After a period of retirement on account of his health, he was ordered, Sept. 29, 1862, to report to Gen. Pope for service in Minnesota.

COOPER, James, brigadier-general of volunteers in the U. S. army, born in Frederic co., Md., May 8, 1810, was graduated at Washington college, Penn., in 1831, studied law with Thaddeus Stevens, and was admitted to the bar in Pennsylvania in 1834; was elected a representative in congress from that state in 1838 and 1840; was a member of the state legislature from 1843 to 1846, introducing and carrying through, after a violent struggle, measures to relieve the credit of the state, then on the verge of permanent repudiation; travelled in Europe in 1847; was made attorney-general of the state in 1848; was reëlected to the legislature; and in 1849 was chosen a U. S. senator, and served till the close of his term in 1855. In politics he was always a whig. After leaving the senate he resumed the practice of the law in Philadelphia, but his health being infirm he removed to his native state in 1860. On the breaking out of the civil war after the election of President Lincoln, he was authorized to raise a brigade of loyal Marylanders, consisting of three regiments of infantry and one of cavalry, and was appointed a brigadier-general May 11, 1861. Cooper's brigade, raised by him under the most adverse circumstances, has done excellent service upon various fields. At the battle of Antietam, the 2d Maryland stormed and carried the *tête du pont* on the left under Burnside; the 1st Maryland cavalry has won and worn high honors; and the 1st Maryland infantry under the gallant Kenly saved Banks from being cut off. Cooper served in Virginia under Fremont, and at the close of 1862 was stationed at Columbus in Ohio.

COOPER, Samuel, a general in the service of the confederate states, born in New York about 1796, was graduated at West Point in 1815, appointed brevet 2d lieutenant of light artillery, and retained in the army on its reorganization at the close of the last war with Great Britain. In May, 1821, he was appointed a 2d lieutenant in the 1st artillery, and a 1st lieutenant in July; was transferred to the 2d artillery in 1821, and to the 4th in 1824; was aide-de-camp to Gen. Macomb from 1828 to 1836; in July, 1831, was made a captain by brevet for 10 years' faithful service, and became a captain in 1836; was appointed an assistant adjutant-general with the rank of major in July, 1838; was promoted to the rank of lieutenant-colonel March 3, 1847; was brevetted as colonel for meritorious conduct in the war with Mexico, and became adjutant with the rank of colonel, July 15, 1852. On March 7, 1861, he resigned his commission, and was appointed the adjutant-general of the confederate army, in which he is the highest officer, standing first on the list of generals. He is a brother-in-law of Mr. J. M. Mason, of Virginia, formerly a U. S. senator and afterward a representative of the confederate states in Europe. He has published a "Concise System of Instruction for the Militia and Volunteers of the United States" (Philadelphia, 1836).

COOPER, Thomas Abthorpe, an English actor, born in 1776, died in Bristol, Penn., in 1849. He passed his childhood in the family of William Godwin, by whom he was adopted, and at the age of 17 went upon the British provincial stage. In 1795 he appeared with success as Hamlet and Macbeth, and in the succeeding year made his debut on the American stage in Philadelphia. He soon obtained a considerable reputation as a tragedian, and in 1802 returned to England, where for nearly 3 years he was one of the chief actors on the London boards. Returning to the United States in Nov. 1804, he soon after became lessee of the New York theatre. In 1810 he made another visit to England, and returned with the tragedian George Frederic Cooke, whose appearance on the American stage gave rise to what is popularly known as the "starring" system. He continued on the stage until the latter part of his life, having no equal in America in such parts as Hamlet, Macbeth, Shylock, Richard III., and Othello, and, after holding for several years a clerkship in the New York custom house, retired to Bristol, Penn.

CORCORAN, Michael, brigadier-general of volunteers in the U. S. army, born at Carrowkeel, county Sligo, Ireland, Sept. 21, 1827. He emigrated to America in 1849, established himself in New York, obtained a clerkship in the New York city post office, and first came into public notice as colonel of the 69th regiment of New York state militia. On the president's call for troops in April, 1861, he took the field with his command, and distinguished himself highly at the first battle of Bull run, where he was wounded and taken prisoner. He was confined successively at Richmond, Charleston, Columbia, Salisbury, N. C., Richmond again, and other places, and was one of the officers selected for execution had the federal authorities carried out the threat of punishing the crews of captured confederate privateers as pirates. He was offered his freedom on condition of promising not to take up arms against the South, but refused to accept it on such terms. He was exchanged Aug. 15, 1862, and immediately appointed a brigadier-general of volunteers, his commission dating from

July 21, 1861, the day of the battle of Bull run. He has since been occupied in recruiting an "Irish legion."

CORINTH, a small village in the N. E. corner of Mississippi, 90 m. E. from Memphis, and about 20 m. W. from the Tennessee river. Two important railroads pass through it, viz., the Memphis and Charleston, from east to west, and the Mobile and Ohio, from north to south. This is the point from which the combined confederate armies of Johnston and Beauregard advanced upon Grant's at Shiloh, and to which Beauregard fell back after the battle, which was fought about 20 m. distant on April 6 and 7, 1862. The position was naturally strong, and but little labor was necessary to put it in a condition of successful defence. The country between it and the river is very uneven, broken into ridges of hills and abrupt valleys, and covered with a heavy forest to within about 4 m. N. of Corinth. Nearer to that place a stream makes a semicircle around the village, and on each side of the creek lies an immense impassable swamp. Over the swamp three wagon roads enter Corinth, one from Farmington on the east, and two from the north. These being the chief features of the position, the confederates strengthened it as follows. From the river where the battle of Shiloh was fought to the point where the woods ceased they dug pitfalls, destroyed bridges over creeks, tore up the corduroy roads made necessary by the frequent marshes, and threw in the way every possible obstruction. Near the edge of the forest they felled timber in great quantities, thus making a most formidable abatis. On each of the three roads crossing the swamp forts were erected, connected with each other by rifle pits and batteries. When Gen. Halleck arrived upon the ground where the battle of Shiloh had been fought, some days after that action, he found Gen. Grant's army much thinned by losses and by disease. It lacked arms, ammunition, means of transportation, camp equipage, and supplies of various kinds. Gen. Buell's army, and one division of that under Grant, were in a better condition, having escaped the reverses of the first day's fight in which the others had so severely suffered. Gen. Halleck sent these troops into camp in the advance, proceeded to supply the wants of Gen. Grant's army, and called to him Gen. Pope with all his force from the vicinity of Fort Pillow and New Madrid. The latter arrived April 24 at Hamburg, about 6 m. above Pittsburg Landing. The three grand divisions of the army then extended from Owl creek on the north to Chambers's creek on the south, along a line of several miles, Gen. Thomas on the right, Gen. Buell in the centre, Gen. Pope on the left, and Gen. McClernand commanding the reserve. On the 27th the order was given to move toward Corinth, and on the night of the same day the army encamped 7 m. nearer that place, the roads having been in some degree repaired. The advance of Gen. Pope's division, however, was made with difficulty, owing to the uneven and swampy nature of the country, seriously aggravated by heavy rains; at the end of 6 days, indeed, the rear of his column had not reached the point where the advance encamped on the first night. On May 4 the entire army was once more put in motion, reaching a point about 7 m. from Corinth, where it remained till the 16th. During the whole time from the commencement of the march to the date last mentioned there occurred frequent though unimportant skirmishes, and two sharp engagements in which Gen. Pope's division was prominent. During this time, moreover, the efforts of Gen. Halleck had been directed to cutting off Beauregard's sources of supply; accordingly, on April 30, a bridge on the Mobile and Ohio railroad some miles north of Corinth was destroyed; this seriously cramped the enemy, inasmuch as the road thus broken was in constant use to bring reënforcements from Memphis, so circuitous a route being taken because the direct communication by the Memphis and Charleston road was impeded by transportation trains. The two engagements referred to took place at and around Farmington, a small town about 4 m. E. of Corinth, at the edge of the swamp. On May 5 a portion of Gen. Pope's command, under Gens. Paine and Palmer, consisting of parts of 9 infantry regiments, two batteries, and one regiment of cavalry, were ordered to make a reconnoissance toward Farmington. After marching unmolested for several miles, they were fired upon by the confederate pickets, and on emerging into an open field encountered the enemy's artillery. The latter were dispersed by a flank fire of musketry, retired to a sheltered position, and made a second stand; from this they were dislodged by the federal artillery, aided as before by a flank movement of infantry; the result was a retreat of the confederates to their third position, just N. of Farmington; they were attacked here with artillery from two points, and fled for the last time, leaving the Union forces free to take possession of the town. The Union loss was 2 killed and 11 wounded; that of the confederates 10 killed, 20 wounded, and 30 prisoners. A small body was left to occupy Farmington, and on the 9th another engagement took place there. On that day the confederates in large force attacked the national troops, who retired from the town and awaited reënforcements; these soon arrived under Gen. Paine, and shortly after the whole body, consisting of 8 regiments of infantry, parts of 2 regiments of cavalry, and 10 pieces of artillery, was opened upon with artillery by the enemy. The Union infantry broke; the artillery checked the advance of the attacking force, but, being unsupported, was compelled to fall back to a new line; the infantry being here exposed to a severe cross fire, Gen. Paine ordered a cavalry charge from two directions, which silenced the fire of the most formidable batteries, though the cavalry, finding themselves soon in face of an overwhelming force of infantry, were obliged to withdraw. The orders of Gen. Pope to Gen. Paine forbade him to bring on a general engagement, the purpose of the former being to draw the enemy from their position in order to pass to their rear with a larger force, and thus cut them off from Corinth. Gen. Paine was, however, obliged to fight so sharply to repel the enemy's attack that the latter retired, leaving the former to occupy Farmington once more. The Union loss in this affair was 21 killed, 140 wounded, and 14 missing; the confederate loss was not ascertained. On the 16th the general advance was continued, and on the 20th the siege began, the first parallel being formed 4 m. in front of Corinth; from this day a steady though slow advance was made, light skirmishing going on with no important result to either side. On the 26th the Union lines were within 2 m. of Corinth; on the 28th, within ¾ of a mile, and on that day the attack was commenced by three strong reconnoitring columns from the Union right, centre, and left, before whom the enemy retired, fighting briskly. It should be stated that for several days a report had been in circulation to the effect that the confederates were evacuating the town, but it was not regarded as trustworthy. The attack of the 28th was so sharply repelled, especially on the Union left commanded by Pope, that a general battle was confidently expected the next day; the enemy, however, kept silence on the 29th, till Gen. Pope opened on them with heavy artillery, when they retired from their battery, and allowed him to occupy the position. Meanwhile, although the resistance to Gen. Pope on the left was strong, the firing from the centre and right was hardly responded to. On the morning of the 30th, before daylight, the last of the enemy abandoned their works. It was then made clear why the response to Pope's fire on the left had been so severe, for the most important point of the confederate defence lay there, being the Mobile and Ohio railroad, by which they were mainly retreating, though it was supposed that considerable bodies of them went in other directions. The federal cavalry made a rapid pursuit, and effected captures of straggling parties, but accomplished nothing of magnitude. The most important movement of this nature was an expedition commanded by Col. Elliott, who with the 2d Iowa cavalry started on the 28th and made a forced march to Booneville, on the Mobile and Ohio railroad; the object of this expedition was to destroy the railroad for the purpose of completely surrounding Beauregard's army. The movement was successfully accomplished, but not until the most of the enemy had used the road in their retreat; the track was destroyed for some distance, several culverts were blown up, 2,500 prisoners, mostly sick and wounded left behind, were captured and paroled, and the confusion of the confederate army was made much greater by the panic thus created. Before the evacuation, the enemy attempted to burn the town, but were only partially successful, the inhabitants interfering to save their property. The direction in which the main portion of Beauregard's force finally withdrew was never known; various rumors were set on foot to account for their disappearance, but none of them were satisfactory. The only point which may be considered as settled is, that no considerable body of them were met, and that no new stand was made by them near Corinth. Parts of the army were gradually transferred, by a very circuitous road, to Chattanooga and East Tennessee; others subsequently fought under Lovell, Van Dorn, and Breckinridge. Beauregard's losses by death and desertion were believed to be very large. His whole force was not far from 90,000 men; his subordinate commanders were Gens. Polk, G. B. Crittenden, Bragg, Lovell, Van Dorn, Price, and Breckinridge. The Union force has not been officially stated.—From this date forward affairs remained quiet at Corinth till September, the place being meantime occupied by Union troops, and confederate forces being again assembled in the neighborhood; then Gen. Rosecrans, being placed in command of the national forces in that district, fixed his head-quarters at Corinth, and reorganized his troops. At Iuka, a few miles S. E., where a small Union force was stationed, skirmishing took place at intervals during September, till the 19th, when Gen. Rosecrans, with two divisions and a regiment of cavalry, attacked the confederate general Price about 2 m. S. of Iuka; the fight, which was sharp, was not finished at nightfall, and being renewed the next morning resulted in the retreat of Price, and the capture of numerous prisoners and much property. The federal loss was about 100 killed, and that of the confederates about 300. It was at once known that the purpose of the enemy was to attack Corinth, and preparations were vigorously made to receive them. Additional and very strong fortifications were erected, the most formidable of which contained three batteries, named Robinette, Williams, and Phillips; these mounted 30-pound Parrott and 8-inch guns. Directly after the battle of Iuka Price marched to Ripley, the capital of Tippah co., Miss., where he effected a junction with Gens. Van Dorn and Villepigue, the combined army, at a moderate estimate, numbering 40,000. An immediate attack on Corinth was decided upon. After waiting at Ripley a few days this force moved forward, meeting a small picket guard of the national troops at a place of little importance N. W. of Corinth, known as Chewalla. The latter retired, the plan of Gen. Rosecrans being to draw the enemy within reach of the newly constructed batteries, of whose existence the confederate generals were ignorant. On the night of Oct. 2 the attacking force were within

4 m. of Corinth, and on the morning of the 3d the battle was opened with artillery, being continued with desultory skirmishing. Till 2 P. M. the action was fought chiefly in a wooded field, and for this reason, as well as because the federal troops were between the works and the enemy, the heaviest guns could not be advantageously used. At that hour a brilliant charge was made upon the confederates by the 17th Wisconsin, and the 7th, 50th, and 57th Illinois regiments, by which the enemy's centre was broken. After this there was little fighting on that day, and the battle was undecided at night, though the Union army had clearly suffered more severely than the confederates. Early on Saturday, Oct. 4, the batteries opened fire from the national lines with great effect; one of these, that called Robinette, was especially galling, and a strong force of the enemy, 2,000 in number, prepared to attempt its capture. Another attack was to be made almost simultaneously upon the town itself, and this first reached the point aimed at. The advance was gallantly made, and went on unchecked by a severe fire of grape and canister, even occupying the streets of Corinth; there the fire of battery Williams was hotly poured upon them, and their reserves being cut off by the heavy discharges from the other batteries, they were compelled to retire, their retreat being hastened by a furious charge. The second attack, that upon the battery Robinette, was the turning point of the battle. The fire upon this column was terribly destructive, but in face of it the force advanced to the battery itself, reserving their fire till they mounted the parapet; they made three attempts to take the position, but were repulsed with great slaughter, and retreated in utter confusion, followed by a charge of a brigade and by the fire of two heavy batteries. In the mean time an action of less importance, though hotly contested, had been going on in front of the Phillips battery, where also the enemy were repulsed. The battle was thus virtually brought to an end soon after midday of the 4th, when the confederates retreated westward. On the morning of the 5th the Union army, being reënforced by 5,000 men from Jackson, commenced the pursuit; on reaching the Hatchie river the confederates found themselves between the forces of Hurlbut and Ord from Bolivar, on the one hand, and the pursuing column of Rosecrans on the other. A hard battle ensued there, continuing till the afternoon of the 6th, and resulting in the complete defeat of the confederates with heavy losses. The federal troops followed in pursuit till the 9th, when Gen. Grant recalled Gen. Rosecrans; at that time the latter reported the enemy dispersed, demoralized, and incapable of further resistance. During the retreat the confederates abandoned and spiked 11 guns, and lost 3 caissons, together with large stores of ammunition. According to the official report of Gen. Rosecrans, the Union loss in this battle was 315 killed and 1,812 wounded, among the former being Gen. Hackleman; while the confederates lost nearly 1,423 killed, including many officers, 1,800 wounded, and 2,248 prisoners. They lost, also, 14 stand of colors, 2 pieces of artillery, 4,500 rounds of ammunition, 3,300 stand of arms, and a large number of accoutrements.

COUCH, Darius Nash, major-general of volunteers in the U. S. army, born in Putnam co., N. Y., July 23, 1822. He was graduated at West Point in 1846, entered the 4th artillery, and was in active service during the Mexican war, attached to Capt. Washington's battery. He received a brevet for gallantry at Buena Vista in Feb. 1847, and was commissioned as 1st lieutenant the same year. He was afterward in command at Key West barracks, aided in suppressing the last outbreak of the Seminoles, and in 1853 obtained a year's leave of absence for the purpose of making a scientific tour in Mexico. He published an account of his explorations under the title of "Notes of Travel." In 1854 he resigned his commission and engaged in mercantile pursuits in New York city, but subsequently removed to Taunton, Mass. In July, 1861, he took the field in command of the 7th Massachusetts regiment, and in August was appointed brigadier-general of volunteers, his commission dating from May 17. On the reorganization of the army of the Potomac he was assigned the command of a division in the corps of Gen. Keyes, with which he greatly distinguished himself at the battle of Fair Oaks. He was promoted to be major-general July 4, 1862; took part in the battles of South mountain and Antietam, in the latter of which he was attached to Gen. Franklin's corps; and was soon afterward placed in command of the 2d (late Sumner's) army corps.

COWDIN, Robert, brigadier-general of volunteers in the U. S. army, born at Jamaica, Vt., in 1805. He went to Boston at the age of 21, with no property but his wardrobe, which he carried in a bundle. Engaging at first in a humble avocation, he eventually became a lumber merchant, and was still in that business when the civil war broke out. He was also an alderman of the city of Boston, and for 20 years was connected with the Massachusetts militia. In June, 1861, he took the field in command of the 1st Massachusetts volunteers, and fought in Gen. Tyler's division at the battle of Bull run. He was promoted to be brigadier-general of volunteers in Sept. 1862.

COX, Jacob Dolson, major-general of volunteers in the U. S. army, born in Montreal, Canada, Oct. 27, 1828. His parents were residents of New York city, where the son studied law for some time, afterward spending three years at Oberlin college, Ohio, and being admitted to the bar of that state in 1853. He practised his profession at Warren, O., until his election to the state senate in 1859. In 1861 he was appointed brigadier-general in the state militia, and placed in command of a camp of instruction. He was commissioned brigadier-general of volunteers May 17, 1861, and selected to command the forces in the Kanawha valley. He soon drove out Gen. Wise, and took possession of Gauley Bridge. He remained in command of this department, except for a short time during which Gen. Rosecrans was over him, until Aug. 1862, when he was assigned a place in the army of Virginia under Gen. Pope. In October he was promoted to be a major-general, and ordered to the district of the Kanawha.

CRAIG, James, brigadier-general of volunteers in the U. S. army, born in Pennsylvania about 1820, studied law and was admitted to the bar; removed to Missouri and settled at St. Joseph; was a member of the state legislature in 1846–'7; served in the Mexican war, and was a captain of Missouri mounted rifles from Aug. 1847, to Nov. 1848; was circuit attorney for the 12th judicial circuit in Missouri from 1852 to 1856; was elected as a democrat a representative in congress from the 4th district of that state in 1857, and was reëlected in 1859. Being a zealous adherent of the Union cause in Missouri, he was appointed a brigadier-general of volunteers, March 21, 1862, and has since been employed in the West.

CRAWFORD, Samuel Wylie, brigadier-general of volunteers in the U. S. army, born in Franklin co., Penn., Nov. 8, 1829. He was graduated at the university of Pennsylvania in 1847, studied medicine, and in 1851 was commissioned as assistant surgeon in the U. S. army. He was immediately ordered to Texas, where he was on duty for 3 years, and then to New Mexico, where he remained until 1856. He was then recalled, with permission to pass through Mexico, and on reaching the capital was retained by the U. S. minister with the assent of the war department. While in that country he made scientific and geographical researches, and was chosen a member of the geographical society of Mexico. He was made bearer of despatches to his government, and then ordered to duty in Kansas. In 1860 he was sent to Fort Moultrie, and was one of the garrison of Fort Sumter in April, 1861, where he volunteered as an officer of the line, and commanded a battery during the action. For this service he was appointed major of the 13th (new) regiment of infantry in Sept. 1861, ordered to western Virginia, and made inspector-general of that department. He was commissioned brigadier-general of volunteers April 25, 1862, and assigned to the corps of Gen. Banks in the army of the Shenandoah. He was in the battle of Winchester, and was mentioned in the report of the commanding general. He was in the advance of the army of Virginia, and in a cavalry reconnoissance to Orange Court House engaged two regiments of the enemy under Gen. Robinson, and took 56 prisoners including several officers; bore a leading part in the battle of Cedar mountain, where he lost more than half of his brigade; and after the death of Gen. Mansfield commanded his division in the battle of Antietam, where he was severely wounded, but kept the field till the close of the action.

CRITTENDEN, George B., a general in the service of the confederate states, born in Kentucky. He is a son of the Hon. John J. Crittenden, and brother of Gen. T. L. Crittenden. He was graduated at West Point in 1832, and appointed brevet 2d lieutenant in the 4th infantry; resigned in 1833, but reëntered the army as captain in the mounted rifles in 1846; became major by brevet for gallantry at Contreras and Churubusco in 1847, full major in 1848, and lieutenant-colonel in 1856. Resigning again, June 10, 1861, he was appointed a major-general in the provisional army of the southern states, and ordered to S. E. Kentucky, where on Jan. 19, 1862, he was defeated by Brig. Gen. George H. Thomas in the battle of Mill Spring or Somerset. He was placed under arrest shortly after this action, and was not released until November.

CRITTENDEN, Thomas Leonidas, major-general of volunteers in the U. S. army, born in Russellville, Ky., in 1819. He is the second son of the Hon. John J. Crittenden, studied law under his father, and having been admitted to the bar rose to the office of commonwealth's attorney. On the breaking out of the Mexican war he hastened to the army, and was appointed volunteer aid to Gen. Taylor, in which capacity he highly distinguished himself at Buena Vista. Gen. Taylor, on his elevation to the presidency, appointed him consul at Liverpool (1849). Returning to America on the accession of President Pierce, he resided for a while at Frankfort, Ky., but afterward engaged in mercantile business at Louisville. He was appointed brigadier-general of volunteers Sept. 17, 1861, and assigned a command under Gen. Buell. For his gallantry at the battle of Shiloh, April 6 and 7, 1862, he was promoted to be major-general, July 17, and assigned a division in the army of the Tennessee. He subsequently commanded the 2d corps, composing the left wing, of the army of the Ohio under Gen. Buell, and in October was attached to Gen. Rosecrans's department of the Cumberland.

CRITTENDEN, Thomas T., brigadier-general of volunteers in the U. S. army, born in Alabama about 1828. He is a nephew of the Hon. J. J. Crittenden, and cousin of Maj. Gen. T. L. Crittenden. He served in the Mexican war as 2d lieutenant of Missouri mounted volunteers, but is now a citizen of Indiana, and in 1861, on the call for troops to serve 3 months, took the field as colonel of the 6th Indiana volunteers, with a detachment of which he took part in the battle of Philippi under Col. Dumont. After the expiration of its term of service, the regiment was reorganized under his command for 3 years. He was promoted to be brigadier-general of volunteers, April 28, 1862, was taken prisoner at Murfreesborough, Tenn., July 12, and was released in October.

CROOK, George, brigadier-general of volunteers in the U. S. army, born in Ohio about

1829, was graduated at West Point in 1852 and appointed brevet 2d lieutenant in the 4th infantry; became 1st lieutenant in March, 1856, and captain May 14, 1861; was made colonel of the 36th Ohio volunteers, serving in western Virginia, and at the head of 1,300 men repulsed a much larger body of confederates at Lewisburg, Greenbrier co., April 23, 1862, capturing 4 cannon, 200 stand of arms, and 100 prisoners. He was made a brigadier-general in Sept. 1862, and took command of the district of Kanawha about Nov. 1.

CROSS KEYS, a place about 8 m. S. E. of Harrisonburg, the capital of Rockingham co., Va., where a battle was fought June 8, 1862. The confederate Gen. Jackson, being pursued by Gen. Fremont, retreated up the Shenandoah valley, his rear covered by Ashby's cavalry and infantry. On June 6 Gen. Fremont's pursuit was unusually vigorous, and the enemy suffered severely; during the retreat from Harrisonburg, on that day, Gen. Ashby was killed, and the way along which the confederate army retreated was strewn with wagons, clothing, and equipments. On the 8th Gen. Fremont, leaving Harrisonburg at 6 o'clock A. M., with not more than 10,000 men, allowing the fullest estimates, met the enemy at Cross Keys 3 hours later. Under Gen. Fremont were Gens. Stahel, Milroy, and Schenck, who were actively engaged in the battle. Jackson's army, which numbered about 15,000, was stationed under cover of woods and in ravines, being well sheltered. Fremont's line, extending nearly two miles, was soon formed; but before this was accomplished the battle was opened on the enemy's right by Gen. Stahel, who forced the confederates to retire. At half-past 12 a general advance was ordered, and the whole line moved forward, descending the slopes of 3 nearly parallel hills, passing through the intervening valley, and ascending the hills on the other side. Gen. Stahel advanced the 8th New York regiment against the enemy's right; the regiment fought with remarkable bravery, but being unsupported was compelled to fall back, the colonel being severely wounded, and the total loss being not less than 300, more than half its strength. The confederates immediately followed up this success vigorously, but their advance was promptly checked by artillery, and Gen. Stahel withdrew his brigade to a stronger position. In the meanwhile, Gen. Milroy in the centre and Gen. Schenck on the right forced the enemy back, a splendid fire of artillery being kept up along the line. The battle continued for more than 3 hours, at the end of which time the Union army held the field. During the night it was expected that the battle would the next morning be renewed; but when the day broke it appeared that the confederates, who were threatened in their rear by the forces of Gen. Shields, had left, rapidly making their way toward Port Republic. The Union loss in this battle was between 600 and 700 killed, wounded, and missing, including many officers. The confederate loss is not accurately known, though hundreds of their dead were left behind them unburied, and the houses along their way were full of their wounded.

CRUFT, Charles, brigadier-general of volunteers in the U. S. army, entered the service in 1861, became colonel of the 31st Indiana volunteers, and was appointed brigadier-general July 10, 1862.

CULLUM, George Washington, brigadier-general of volunteers in the U. S. army, born in New York city, Feb. 25, 1812, was graduated at West Point in 1833 and appointed brevet 2d lieutenant in the corps of engineers; became 2d lieutenant April 20, 1836, and captain July 7, 1838. From 1833 to 1838 he was employed under Col. Totten in the construction of Fort Adams and other works at Newport, R. I., with the exception of two years while assistant to the chief engineer at Washington. From 1838 to 1848 he superintended the erection of Fort Trumbull and the battery at Fort Griswold, New London, Conn., and from 1846 to 1848 of Forts Warren, Independence, and Winthrop, and other national works in Boston harbor, at the same time having charge of the construction of the sapper, miner, and pontoon equipages for the armies then invading Mexico. From 1848 to 1855 he was instructor of practical engineering in the military academy at West Point, during which time he spent two years in European, oriental, and American travel for his health; and in 1853-'4 constructed the New York assay office. He was also appointed in 1848 commandant of sappers, miners, and pontoniers in the army. He afterward superintended the construction of the fortifications and other public works in North and South Carolina, and in 1858 took charge of those at New Bedford, Newport, New London, and New York on the sound. On the breaking out of the civil war in 1861 he was ordered to Washington, served as aide-de-camp to Gen. Scott, with the rank successively of lieutenant-colonel and colonel, from April 9 to Nov. 1, and was promoted to be major of engineers. On Nov. 12, 1861, he was nominated a brigadier-general and appointed chief of staff and engineers to Gen. Halleck, commanding the department of the Mississippi, and still holds the same relation to that general, having served through the campaign before Corinth and accompanied him when he was called to the chief command at Washington. While at the West he also had command for some time at Cairo, Ill., and since 1861 has been a member of the U. S. sanitary commission. Gen. Cullum has published a "Register of the Officers and Graduates of the U. S. Military Academy" (New York, 1850); "Military Bridges, with India Rubber Pontoons" (8vo., New York, 1849; 2d ed., 1863); and a translation of Duparcq's "Elements of Military Art and History" (1863).

CUMBERLAND GAP, a pass in the Cumberland mountains in S. E. Kentucky, 145 m. S. E. of Lexington, and 50 m. N. of Knoxville, which has proved of much strategic importance during the existing civil war. The Cumberland mountains have in this region a general N. E. and S. W. direction, and for upward of 150 m. E. of the gap they present no opening available for a wagon road. The gap itself affords a narrow but perfectly practicable road, and W. of it are Baptist, Rogers's, and Big Creek gaps, which, without being in any sense depressions in the mountain range, derive their name from the fact that the summit is there somewhat more easy of access than elsewhere. Over Rogers's and Big Creek gaps, distant respectively 20 and 35 m. from Cumberland gap, lightly laden wagons have occasionally been known to pass; but prior to the war persons living S. of Big Creek gap preferred to drive an additional 80 m. rather than attempt even with empty wagons the passage of either that or Rogers's gap. The average height of the range is about 1,200 feet, one side of it being nearly perpendicular, and the walls enclosing Cumberland gap are 400 feet high. Through this defile therefore passes the only available road for hundreds of miles from Kentucky into eastern Tennessee, and the possession of it, in view of the well known Union sentiment of the people of the latter region, became early in the contest an important consideration with both Union and confederate generals. A Union army occupying the gap in force could threaten the railroads which pass through Knoxville and connect the eastern and western slave states, and could thus isolate to some extent the two regions; and a confederate army similarly posted could effectually oppose the efforts of the national troops to penetrate into eastern Tennessee, and could secure uninterrupted railroad communication for the seceded states. The gap was accordingly early occupied by a body of confederate troops, who kept in check the Unionists of East Tennessee, and sought to render their almost impregnable position still more strong by forming earthworks and rifle pits at every available point, and by blockading the gaps to the west by fallen trees and rocks so as to render them impassable to cavalry or artillery. No serious attempt against the gap was made by the Union forces until the general advance southward in the spring of 1862, when Gen. G. W. Morgan was sent there with an army of about 10,000 men. Arriving at Cumberland ford, on the Cumberland river, 10 m. N. of the gap, early in April, he ascertained by several extended reconnoissances the formidable character of the confederate defences, and the necessity of making a flank march across the mountains and attacking them in the rear. In order to facilitate this movement, the enemy were kept amused by various manœuvres in front of the gap, and a diversion against the important position of Chattanooga in S. E. Tennessee was attempted by a portion of Buell's army, under cover of which one of Morgan's brigades entered Rogers's gap on June 5 and began to remove the obstructions. Two other brigades followed, and so quietly and skilfully was the march conducted that the head of the column had advanced 40 m. over one of the most difficult routes ever travelled by artillery, before the confederates were aware that a single soldier had left Cumberland ford. Heavy siege guns were hauled along by the aid of block and tackle, horses and men pulling at the same rope; and in order to secure the rear guard from attack, the mountain sides were mined so that the valleys along the route could be at any moment obstructed. On June 11 this portion of Morgan's army reached Powell's valley on the S. side of the mountains, from which point it could threaten equally Cumberland gap on the E., Knoxville on the S., and Clinton, the confederate depot of supplies, on the S. W. The remaining brigades had meanwhile crossed the mountains at Big Creek gap, and on the 16th the whole army was concentrated at Fincastle, Tenn., the junction of the Knoxville and Valley roads, whence on the morning of the 18th it marched for Cumberland gap, 9 m. distant. The confederate Gen. Stevenson however evacuated the position at the approach of Morgan, by whom on the same evening it was quietly occupied. Here Morgan remained undisturbed for two months, awaiting the reënforcements, without which it would have been imprudent to attempt a demonstration on Knoxville or adjacent points. Meanwhile the confederates under Stevenson began to gather in formidable numbers in front of him, and on Aug. 17 Gen. E. Kirby Smith, who had passed through Rogers's and Big Creek gaps, appeared in his rear with 25,000 men, effectually interrupting his communications with Lexington and the north. The confederates confidently expected the surrender of the Union forces, thus cut off from their supplies; but as Morgan showed no disposition to capitulate, Smith was compelled at the expiration of a week to move northward to Lexington to obtain subsistence. For a month Morgan held out in the hope that assistance would reach him, and finally on Sept. 17 was compelled by fear of starvation to evacuate the gap and march toward the Ohio. Previous to his departure every thing not capable of being removed was destroyed, and the road was rendered impassable by exploding the mines laid in the adjoining mountain sides. The enemy immediately reoccupied the gap, and still (Dec. 1862) hold it in large force.

CURRY, Jabez Lafayette Monroe, an American politician, born in Lincoln co., Ga., June 5, 1825, removed with his family to Talladega co., Ala., where he still resides. He was graduated at the university of Georgia in 1843, and at the law school of Harvard university in 1845, and soon became distinguished as a lawyer. In 1846 he joined a regiment of Texas rangers raised for the Mexican war, but was compelled by ill health to leave it. He was a member of the house of representatives of Alabama in 1847, 1853, and 1855, and in 1856 was chosen a representative in congress, and distinguished himself in that body by great ability as a debater. Long before the election of President Lincoln he declared himself in favor of the dissolution of the Union in case of the election of a republican president; and on Jan. 7, 1862, he joined the other representatives of Alabama at Washington in advising the immediate secession of the state. He was appointed, Jan. 8, by the authorities of Alabama, a commissioner to invite Maryland to coöperate in the secession movement, and is now (Dec. 1862) a member of the confederate house of representatives.

CURTIN, Andrew Gregg, governor of Pennsylvania, born in Bellefonte, Centre co., Penn., April 22, 1817. He was a pupil of the law school of the Hon. John Reed, professor of law in Dickinson college, was admitted to the bar in 1839, and commenced practice at Bellefonte. He took an active part in politics, canvassing the state for Henry Clay in 1844 and Gen. Taylor in 1848. In 1855 he was appointed by Governor Pollock secretary of state and superintendent of common schools of Pennsylvania. At the close of his term of office in 1858 he returned to the practice of his profession at Bellefonte. In 1860 he was nominated for governor by the republican party, and after an exciting contest, in which he actively canvassed the whole state, was elected by a majority of 33,000 over his competitor, Gen. Foster, who united the votes of the supporters of Bell, Breckinridge, and Douglas. On the outbreak of the civil war in 1861 he devoted himself with great zeal to the organization of troops, and in a message to the legislature at the special session in May, 1861, advised the establishment of a reserve corps, which has since rendered important services to the country.

CURTIS, Samuel R., major-general of volunteers in the U. S. army, born Feb. 3, 1807, in Ohio, while his parents were on their way from Connecticut to the West. He entered the military academy from New York in 1827, and was graduated in 1831, receiving the appointment of brevet 2d lieutenant in the 7th infantry, in which he served till June 30, 1832, when he resigned. He then studied law in Ohio and was admitted to the bar, but left that profession to devote himself to engineering, and from April, 1837, to May, 1839, was the chief engineer of the Muskingum river improvement. At the beginning of the Mexican war he became adjutant-general of Ohio, and on June 23, 1846, colonel of the 2d Ohio volunteers. He served under Gen. Taylor in Mexico, was successively governor of Matamoras, Camargo, Monterey, and Saltillo, and when the 12 months was completed for which his regiment had enlisted and they were discharged, he remained as acting assistant adjutant-general to Gen. Wool. Returning to Ohio, he resumed the practice of the law, but again abandoned it for engineering labors in Iowa and Wisconsin, and finally settled at Keokuk, Iowa. He was elected in 1856 a representative in congress from the 1st district in that state, and was reëlected in 1858 and 1860. He was also a member of the peace conference in 1861. In congress he was a steady adherent of the republican party, and especially identified himself with the advocacy of the project of constructing a railroad to the Pacific ocean. He was commissioned colonel of the 2d Iowa volunteers in June, 1861, and ordered to duty in N. Missouri, but soon went to Washington to attend the extra session of congress. While there he received the commission of brigadier-general of volunteers, dating from May 17. In August he resigned his seat in congress and took command at Jefferson barracks. He served under Gen. Fremont at St. Louis and Benton barracks, and when Mr. Cameron, secretary of war, and Adjutant-Gen. Thomas visited that department to investigate the conduct of the commanding general, Gen. Curtis testified that he did not think him competent to his position. After Gen. Halleck took command of the department, Nov. 8, Gen. Curtis was placed in charge of the St. Louis district. Subsequently he was made commander of the army destined to operate against the confederates in S. W. Missouri and Arkansas, and which, having driven Price, McCulloch, and Van Dorn from Missouri, fought and won the important battle of Pea ridge in N. W. Arkansas, March 6, 7, and 8, 1862. Promoted to be a major-general, March 21, he now entered Arkansas on the head waters of the White river, and marching his army, a part of which was transferred to Gen. Halleck's command before Corinth, through the state without other serious conflicts, but amid considerable difficulties, arrived at Helena, on the Mississippi, June 18. Here he remained until August, when he obtained leave of absence to attend a meeting at Chicago to organize a Pacific railroad company, of which he is one of the corporators; after which he was ordered to take command in the state of Missouri, with his head-quarters at St. Louis, where he still remains (Dec. 1862).

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DANA, Napoleon Jackson Tecumseh, brigadier-general of volunteers in the U. S. army, born at Fort Sullivan, Eastport, Me., April 15, 1822. He was graduated at West Point in 1842, received a commission as 2d lieutenant in the 7th infantry, and was assigned to a company stationed at Fort Pike, La. During the Mexican war he served with distinction, was severely wounded at the battle of Cerro Gordo, and was brevetted captain. Upon his recovery he was ordered to Boston, and from thence to Minnesota, where he was employed in the construction of Forts Ripley and Ridgely. In 1855 he resigned his commission, and engaged in mercantile pursuits until Oct. 1861, when he was appointed colonel of the 1st Minnesota volunteers. He took command of his regiment at Poolesville, Md., and on the 21st of that month participated in the battle of Ball's bluff. He was made a brigadier-general of volunteers Feb. 3, 1862, and assigned to the army of the Potomac, with which he was engaged in all the battles in the peninsula and before Richmond. At the battle of Antietam he commanded a brigade in Gen. Sedgwick's division of Sumner's army corps, and was wounded.

DASENT, George Webbe, an English author, born about 1818. He was educated at King's college, London, and Magdalen hall, Oxford, where he was graduated B.A. in 1840. He was called to the bar at the Middle Temple in 1852, but has devoted himself chiefly to the study of Scandinavian literature, and resided for some time in northern Europe. He has translated from the Norse "The Prose or Younger Edda of Snorro Sturleson" (1842), and published "Theophilus Eutychianus, from the original Greek, in Icelandic, Low German, and other Languages" (1845); "The Norsemen in Ireland" (1855); "Popular Tales from the Norse" (Edinburgh, 1858); "The Story of Burnt Njal, from the Icelandic Njal's Saga" (2 vols. 8vo., 1861); and "Selection of Norse Tales for Children" (1862). Mr. Dasent has also contributed to the "Oxford Essays" a paper on "Ancient Iceland," and has received from Oxford university the degree of D.C.L. He has been for some years one of the writers for the London "Times."

DAVIDSON, John Wynn, brigadier-general of volunteers in the U. S. army, born in Fairfax county, Va., Aug. 18, 1824. He was graduated at West Point in 1845, and appointed 2d lieutenant in the 1st dragoons. In 1846 he accompanied Gen. Kearny's expedition to California in command of a battery of howitzers, and remained on the Pacific coast until 1850. During this period he was in the battles of San Pasqual, Dec. 6, 1846; San Bernardo, Dec. 7, 1846; San Gabriel, Jan. 8, 1847; plains of the Mesa, Jan. 9, 1847; Clear lake, Cal., May 17, 1850; and at Russian river, June 17, 1850, under Capt. (afterward Gen.) Nathaniel Lyon, 2d infantry. He fought the battle of Cieniguilla, New Mexico, March 30, 1854, against the Apache and Utah Indians, losing three fourths of the squadron under his command, and being wounded himself in the engagement. He was promoted to be captain Jan. 18, 1855, and in August of that year commanded an expedition sent to open communication between Santa Fé and Capt. Pope's wells on the Pecos river. He was appointed major in the 2d dragoons Nov. 14, 1861, and brigadier-general of volunteers Feb. 3, 1862. He was immediately afterward assigned to the command of a brigade in Smith's division of the army of the Potomac, and served in the battles at Lee's mills, April 5, 1862; Mechanicsville, May 24; Golding's farm, June 28; and White Oak swamp, June 30. Early in August he was transferred to the department of the Mississippi, and placed in command of the S. E. district of Missouri.

DAVIES, Thomas Alfred, brigadier-general of volunteers in the U. S. army, born in St. Lawrence co., N. Y., in Dec. 1809. He was graduated at the military academy in 1829, assigned to the 1st infantry, and immediately ordered to the N. W. frontier, and served two years under Col. Zachary Taylor. In 1831 he resigned his commission, and for the next 30 years his time was divided between the profession of civil engineering and mercantile pursuits in the city of New York. In 1840–'41 he was engaged on the Croton aqueduct. In May, 1861, he was chosen colonel of the 16th New York volunteers. In the first battle of Bull run, July 21, 1861, he was acting brigadier, commanding the left wing of the army; and for his gallant conduct on this occasion he was commissioned brigadier-general of volunteers, March 7, 1862. He joined the army of the West under Gen. Halleck, and during the movement against Corinth commanded the second division of the army. He is the author of a work entitled "Answer to Hugh Miller and Theoretical Geologists" (12mo., New York).

DAVIS, Jefferson C., brigadier-general of volunteers in the U. S. army, born in Indiana. He was appointed to the regular army from his native state, and commissioned 2d lieutenant in the 1st artillery in 1848. In 1852 he was made 1st lieutenant, which rank he held at Fort Sumter during the bombardment in April, 1861. In the following May he was promoted to be captain, and allowed leave of absence to take command of the 22d Indiana volunteers. He was assigned to a brigade by Gen. Fremont, and served with him in Missouri; but when Fremont was removed he lost his rank, the commissions issued by that general not being held valid. He continued however to command a brigade, with the rank of colonel, under Gens. Hunter and Pope. For his conduct at the engagement of Milford in central Missouri, where he captured a superior force with a large quantity of military supplies, he was made a brigadier-general of volunteers, Dec. 18, 1861, and at the battle of Pea ridge was placed in command of one of the 4 divisions of Gen. Curtis's army. He was then transferred to Gen. Halleck's army before Corinth, and after the evacuation of that place by the confederates was placed over a division in the army of the Tennessee. When Bragg invaded Kentucky, Gen. Davis reported to Gen. Nelson at Louisville, and was charged with the organization of the city militia. Suspended from his command for some trifling cause, and ordered to report to Gen. Wright at Cincinnati, he was at once restored to duty by that officer, and sent back to Louisville, where his proper commander, Gen. Buell, had now arrived. On Sept. 29, meeting Gen. Nelson at a hotel in that city, Gen. Davis addressed him on the subject of his arrest, when Nelson struck him twice in the face. Gen. Davis thereupon borrowed a pistol and shot Nelson through the breast, killing him almost immediately. After remaining a short time under arrest he was restored to duty, and ordered to Covington.

DAVIS, Thomas, an Irish poet, born at Mallow, county Cork, in 1814, died in Dublin, Sept. 16, 1845. He was educated at Trinity college, Dublin, and on the establishment of the "Nation" newspaper in 1842 became one of its principal writers. A conviction of the importance of stirring national ballads in the formation of the "Young Ireland" party, to which the "Nation" was devoted, induced him to make his first attempts at poetical composition in the columns of that paper; and during the rest of his life he continued to write for it, under the pseudonyme of "A Celt," a variety of lyrical and ballad pieces, which became widely popular. An edition of them, with an introduction by John Mitchel, appeared in New York in 1860.

DEÁK, Ferencz, a Hungarian statesman, born at Kehida, in the county of Zala, Oct. 17, 1803. He was educated at Comorn and Raab, devoting himself to legal and political studies, and at an early age became prominent in the debates of the county assembly of Zala. Elected a member of the diet of 1832–'6, he became the leader of the opposition in that as well as in the following legislative assembly (1839–'40). His greatest parliamentary service was the elaboration, in conjunction with Szalay and others, of an excellent project of a penal code. Again elected by his native county to the diet of 1843–'4, he refused to serve on account of the instruction given to the representatives by the reactionary majority of the county, then triumphant, to vote against the proposed equality of taxation, to which Deák, with some 200 other nobles, now voluntarily subjected himself. Failing health compelled Deák to decline also the offered election to the diet of 1847–'8; but in the spring of 1848, after the decisive victory gained by the opposition, now under the lead of Kossuth, over the Austrian government, he accepted the portfolio of justice in the Batthyányi ministry. That ministry resigning on the outbreak of open hostilities against Austria, he retired to private life, in December was a member of the unsuccessful deputation sent to the camp of Windischgrätz for the negotiation of peace, was arrested by that Austrian commander, but soon released, and took up his abode at Pesth. After rejecting various overtures made him by the Vienna cabinet with the object of gaining him over as a mediator between the dynasty and the Hungarian people, he reappeared in the public arena toward the close of 1860, after the reverses in Italy and financial embarrassments compelled Francis Joseph to promise the restoration of the national liberties. Elected by the city of Pesth to the diet of 1861, held in that city, he, after a short contest with the more revolutionary Count Ladislas Teleky, who committed suicide, was acknowledged as the leader in that assembly. His efforts, however to bring about a satisfactory solution of the national difficulties on the basis of the laws of 1848 failed, and in August, 1861, he again retired from public life, the diet being dissolved.

DENVER, James W., brigadier-general of volunteers in the U. S. army, born in Winchester, Va., in 1818. In his childhood he emigrated with his parents to Ohio, removed to Missouri in 1841, and taught school and studied law there; was appointed a captain in the 12th infantry, March 5, 1847; left the service on the conclusion of the war with Mexico, July 25, 1848; emigrated to California in 1850, and became a member of a committee formed there to protect emigrants against fraud; took up his residence in Trinity co., and in March, 1852, was elected to represent Trinity and Klamath counties in the state senate; on Aug. 2, 1852, killed the Hon. Edward Gilbert near San Francisco, in a duel fought with rifles at 40 paces, the fatal event taking place at the second fire, Denver having discharged his piece in the air at the first; in Feb. 1853, was appointed by Gov. Bigler to the office of secretary of state; in Oct. 1854, was elected a representative in congress, and served as such until March 4, 1857, when his term expired, and he was appointed by President Buchanan commissioner of Indian affairs, but resigned that office and was appointed governor of the territory of Kansas in Dec. 1857, after the resignation of Gov. R. J. Walker. This office he also resigned in Aug. 1858, and was reappointed commissioner of Indian affairs, and retained that post until the accession of President Lincoln in 1861. After the breaking out of the civil war he was appointed a brigadier-general of volunteers, Aug. 14, 1861, and has served in the western states. He was for a time in command in Kansas, but owing to feelings excited at the time when as governor he endeavored to secure the enforcement of the Lecompton constitution, the people desired and procured the substitution of another commander.

DEVENS, Charles, jr., brigadier-general of volunteers in the U. S. army, born in Charlestown, Mass., April 4, 1820. He was graduated at Harvard college in 1838, entered the law school there, and from 1841 to 1849 practised law in Franklin co., Mass. In 1847–'8 he was a member of the state senate. Under Presidents Taylor and Fillmore (1849–'53) he was U. S. marshal for the district of Massachusetts; and in 1854 he resumed the practice of the law in Worcester. On April 16, 1861, he was chosen major of a battalion of rifles which was preparing to respond to the president's call for troops, and with it performed garrison duty at Annapolis and Baltimore till he was appointed colonel of the 15th Massachusetts volunteers.

He commanded at the battle of Ball's bluff before the arrival of Col. Baker, and again after the death of the latter, and at the close of that disastrous affair escaped with the remnant of his command by swimming to Harrison's island. He was commissioned brigadier-general of volunteers, April 15, 1862, and was in the battles of Williamsburg and Fair Oaks, in the latter of which he was wounded. In the battles of South mountain and Antietam he fought with his brigade under Gen. Couch. In Nov. 1862, he was the unsuccessful candidate of the "people's party" for governor of Massachusetts.

DIALYSIS (Gr. *διαλυσις*, a separating, dissolution), or Analysis by Diffusion, names given by Professor Thomas Graham to a method lately proposed by him for effecting certain separations, usually of compound substances one from another, by means of the different rates at which such substances diffuse through moist gelatine-like films or other septa, or upward through water or viscid masses. For general principles of diffusion, as relating to gases, and the passage of liquids or gases through moistened porous partitions or septa, see Diffusion of Gases, and Endosmose. An example will illustrate the nature of the new processes and results. A sheet of very thin and well sized French letter paper being thoroughly moistened, and depressed at the middle to form a sort of cup, a mixed solution containing 5 per cent. each of cane sugar and gum arabic is poured into it; and the paper cup is then placed upon the surface of water in a deep basin narrow enough to keep its edges elevated, and left for 24 hours. The cup being removed at the end of the time, the quantity of liquid it contains is found increased by endosmose; but while a little of the liquid in the vessel below, tested with subacetate of lead, shows a mere trace of gum, upon evaporation of the remainder the sugar crystallizes from it, in quantity equal to ¾ of that placed within the paper cup. The sugar, therefore, has rapidly made its way through the septum used, while the passage of the gum has been almost perfectly resisted. The paper can be replaced by moist animal membrane, or by a thin layer or film of any substance having the character of a jelly, as hydrated gelatine, albumen, mucus, or gelatinous starch; but the most efficient and useful septum is the parchment paper in thin sheet and without sensible flaw or porosity. Now, it is found that, through moist films or partitions such as those here named, through masses of different substances in the gelatinous state, or through liquids, very many and perhaps all substances capable of crystallization in definite forms, make their way by diffusion at rates which, though differing for the different substances, are rapid in comparison with those at which any substance having itself the gelatinous or jelly-like condition can traverse or diffuse in the same media. These facts led Professor Graham to divide the great body of chemical substances (especially those in compound form) into two classes, which are readily characterized by the tendency of the former to crystallize definitely, either alone or in combination with water, and to dissolve rapidly and generally in solutions free from viscosity; while the latter when dry incline to the vitreous structure, having little tendency to crystallize, dissolve slowly or only soften, and as a rule assume the viscid or gelatinous state. To these classes, respectively, he gives the names of "crystalloids" and "colloids" (the latter from the Gr. *κολλα*, glue). In experiments such as those already referred to, the paper sized with starch, or other film or membrane containing a jelly or viscid material of any sort, is a colloidal partition or body; and the colloid gum has very slight power to penetrate it, as is found true also of such substances as hydrated silicic acid, a number of hydrated metallic peroxides, starch, other vegetable gums, dextrine, caramel, tannin, albumen, and vegetable and animal extractive matters, all of which are colloids. The crystalloids, however, as cane sugar, and a large number of chlorides, sulphates, &c., of metallic bases, readily penetrate the colloidal partitions or media; and the explanation given is, not that either class of substances is afforded or denied passage through any effect of capillary attraction as ordinarily understood, but that, the affinity of any colloid for water being of the feeblest character, one colloid cannot with any rapidity abstract molecule for molecule the water from another, and by means of which it could be conveyed through it; while the crystalloids brought in contact with a moist colloid, having a high affinity for water, can displace the colloid from solution particle by particle, and thus make their way through its mass. These results are visibly and beautifully shown by placing at the bottom of two glass jars respectively, in a little starch jelly and then surmounted with several inches depth of the same jelly, a colored crystalloid, as bichromate of potash, and a colored colloid, as caramel; the gradual elevation of the former through the mass can be daily observed, while at the end of 8 days the caramel has scarcely begun to discolor the jelly above its first position. The different rates of diffusion through such septa allow of the employment of the method thus discovered for separating, in degree or partially, one from among two or more crystalloids existing in mixture, but still more readily and satisfactorily a crystalloid from a colloid. To this peculiar mode of separation Graham gives the name dialysis. It is conveniently effected by use of a "hoop dialyser"—a sheet of parchment paper stretched beneath a hoop, and secured about it in the manner of a sieve, the sheet being moistened, and receiving in it a very thin layer of the solution from which some substance is to be separated (the separation being more rapid as the layer is thinner), and floating the arrangement on a sufficient body of water in a larger vessel. To separate in degree two or more crystalloids, the simpler method of "jar diffusion" often suffices. The mixed solution of crystalloids is conveyed by use of a pipette, and so quietly as to leave the superincumbent liquid quite undisturbed, to the bottom of a jar of water or alcohol, and left at rest; the most diffusible substance rises most rapidly, and is more entirely separated from the others as the time is greater, and the height to which it ascends through the column increases. By carefully drawing off with a siphon, at the end of the experiment, successive strata of the liquid into separate vessels, and quantitatively analyzing their contents, the quantities of the "diffusates" in the strata from below upward, and so the diffusibilities of the substances, are determined. Thus, with 10 per cent. solutions in pure water, introduced to the bottom of separate vessels, beneath 4.38 inches of pure water, 1 per cent. of common salt in solution had at the end of 14 days reached the uppermost of 16 strata of equal depth in the column; while in the same time sugar had barely appeared (.005 gramme) in the uppermost stratum; gum had diffused itself to the 10th stratum only, and tannin to the 9th, from the bottom. By such means, with proper care and noting of conditions, the absolute and comparative diffusibilities of substances can be determined. Hydrochloric acid and the allied hydracids are found to be the most diffusive substances known; the solid chlorides are high in the scale, and of these apparently chloride of sodium highest. As an illustration of the results of series of experiments, the approximate times of equal diffusion of the following substances were found as here given: hydrochloric acid, 1; chloride of sodium, 2.33; sugar, and sulphate of magnesia, 7; albumen, 49; caramel, 98. When two or more diffusible substances are mixed, the difference in their rates of diffusion is increased, and effective analysis by diffusion is thus favored. The rate of diffusion is much accelerated by elevation of temperature of the liquid or mass, so that separations may be effected in less time at high temperatures; but the degree of separation is less, since at the same time the less diffusible substances gain in the higher ratio. The rate of diffusion of all substances is less in alcohol, and probably in most other liquids, than in water, or in semi-fluid masses rendered such by water. The name "diffusate" has been given to any substance as diffused, or separated by dialysis.—The relations and applications of the new facts, and the principle which is their basis, are numerous, and some of them of high importance. The dialyser affords an advantageous method, in fact almost the only one yet discovered, for completely purifying soluble colloids without risk of decomposition, by the readiness with which all crystalloid substances pass from them into water; and Professor Graham in his paper ("Philosophical Transactions," 1861, part i. p. 183) gives directions for the preparation and purification of many substances of this class. Again, the peculiarities of behavior and of relations found to characterize the two classes of bodies, crystalloid and colloid, have acquired a new interest; and an additional mode of classifying and regarding chemical substances, upon this basis, seems called for. Beside the distinctions already referred to, it will be observed that crystalloid bodies tend to aggregate in plane films and with angular outlines, and are hard and solid; while the more usual condition of the colloid is that showing rounded outlines, a homogeneous mass, with more or less softness and toughness of texture. The water of crystallization in the former is represented by water of gelatination in the latter. The colloids are usually insipid; the crystalloids more commonly have a marked taste. Chemically, the former are the inert bodies; the latter, usually active or energetic. But as observed in their most usual conditions, the rigid crystalloids are almost wholly unsusceptible to external impressions; while the soft colloids have a wide sensibility to external agencies, and thus great mutability of condition. Even the simply mineral colloids cannot long be kept without change—pure hydrated silicic acid, or soluble silica, sealed up tightly, undergoing change within a few days or weeks; and the existence of many of them is only in and during a continued metamorphosis. This is especially true of albumen, gelatine, mucus, and related substances, as existing in the fluids and living tissues of the animal body. These colloids are plastic or nutritive, and apparently in good part because they are mutable or capable of those successive metamorphoses during which the conditions of vitality can be secured, and in turn vital force and action evolved and manifested. Thus, these elements stand physiologically in relations the reverse of those they show chemically; and Professor Graham accordingly terms the crystalloid a statical, and the colloid a dynamical condition of matter. He suggests that the colloidal condition of matter may be looked upon as "the probable primary source of the force appearing in the phenomena of vitality;" while "to the gradual manner in which colloidal changes take place (for they always demand time as an element) may the characteristic protraction of chemico-organic changes also be referred"—in these intending to include, of course, the time required for application of the power of the will, for exertion of muscular force, and the physical changes that underlie the phenomena of sensation and thought. The facts observed in connection with diffusion appear to lead to a new understanding of endosmose, as effected, in part at least, by the circumstances that a colloid cannot abstract water from (or dehydrate) another colloid or a crystalloid, while a crystalloid can readily dehydrate a colloid, and in so doing effect its own movement through the latter. Finally, dialysis affords a new method of conducting analytical inquiries, though to what extent it will prove applicable is yet to be ascertained. By it, soluble albumen may be obtained in a state of purity, by addition of acetic acid, and use of a colloidal septum; and blood, milk, or other organic fluids, charged with a small quantity of arsenious acid, being properly diluted and placed in the dialyser upon water, yield the greater portion of the poison to the latter within 24 hours, and so free from organic matter that it can be at once precipitated by sulphuretted hydrogen and weighed. In view of the great difficulty of separating arsenious acid from organic matter, by the methods hitherto known, this easy separation and approximate determination of quantity of the poison, by the new method, must be regarded as a result of the highest value.

DIANIC ACID, an acid found in minerals similar to those yielding the tantalic, from the metal tantalum, and the niobic, from niobium, discovered in 1860 by Von Kobell, and believed by him to be the acid of a new metal not yet obtained in separate form. By a certain course of treatment of tantalite from Tammela, of euxenite, and some other compounds ("Philosophical Magazine," June, 1861), a blackish gray powder was obtained, which, boiled with hydrochloric acid and tinfoil, gave a dark blue fluid, turning on being much diluted to a characteristic clear and deep sapphire blue. The tin being removed by a stream of sulphuretted hydrogen, and the acid separated and purified, the latter is white, changing while heated to a pale yellow. The discoverer would name the assumed metal of this acid dianium (from Diana), in view of the oppositeness of the characters of its acid from those of niobic acid (Niobe). The symbol of the metal he makes Di. The supposed, but, as he argues, not real tantalite containing it, he terms dianite. He considers the presence of dianic acid shown also in some other minerals, including tantalite from Greenland, pyrochlore, &c. Respecting the acid little further is yet known. With borax and a salt of phosphorus it dissolves before the blowpipe to a colorless glass; and if the borax is thus saturated, the glass remains transparent on cooling after exposure to a considerable heat, but warmed again becomes cloudy, taking the appearance of enamel.

DODGE, GRENVILLE M., brigadier-general of volunteers in the U. S. army, born in Danvers, Mass., April 12, 1831. He received a scientific and military education at the seminary of Capt. Alden Partridge in Norwich, Vt., and in 1851 removed to Illinois, where for several years he was employed in the surveys of the principal railways of that state. Subsequent to 1854 he was occupied in a similar capacity in Iowa, prosecuting his surveys west of the Missouri river as far as the Rocky mountains. At the commencement of the civil war in 1861 he was sent by the governor of Iowa to Washington to procure arms and equipments for the troops of that state. On June 17 he was commissioned colonel of the 4th Iowa regiment of infantry, which under his command soon attained a remarkable degree of efficiency. He served in Missouri during the year 1861, and in the succeeding February accompanied the army of Gen. Curtis on its march into Arkansas. At the battle of Pea ridge, he commanded a brigade on the extreme right of the Union position, and although severely wounded in the side kept the field until the final rout of the enemy. For his gallantry on this occasion he was promoted to be a brigadier-general, his commission dating from March 31. In the succeeding June he was placed in command of the district of the Mississippi, and superintended the reconstruction of the Mississippi and Ohio railroad. He was subsequently assigned to the middle division of the same district, which command he still holds (Nov. 1862).

DÖLLINGER, JOHANN JOSEPH IGNAZ, a Roman Catholic theologian, son of the physiologist Döllinger (see DÖLLINGER, IGNAZ), born in Bamberg, Bavaria, Feb. 28, 1799. He was appointed in 1822 chaplain at Oberscheinfeld in the diocese of Bamberg, in 1823 professor of church history and ecclesiastical law at the lyceum of Aschaffenburg, and in 1826 at the university of Munich, afterward provost of the collegiate church of St. Cajetan in Munich and archiepiscopal councillor, and also first librarian at the university library; and since 1845 he has been representative of the university in the Bavarian diet. On Aug. 31, 1847, he was, in consequence of the troubles created by Lola Montez, removed together with several of his colleagues from his professional chair, to which he was restored in 1849. In 1848 he was elected member of the German national parliament at Frankfort. Döllinger is one of the most prolific writers of the Roman Catholic church of Germany, and is classed by the unanimous opinion of both Catholics and Protestants among the greatest church historians of the 19th century. His principal works are: *Die Lehre von der Eucharistie in den ersten drei Jahrhunderten* (Mentz, 1826); *Handbuch der Kirchengeschichte* (vols. i. and ii., Landshut, 1833); *Lehrbuch der Kirchengeschichte* (2 vols., Ratisbon, 1836–'8); *Mohammed's Religion* (Ratisbon, 1838); *Die Reformation, ihre innere Entwickelung und ihre Wirkungen im Umfange des lutherischen Bekenntnisses* (3 vols., Ratisbon, 1846–'8); *Hippolytus und Kallistus* (Ratisbon, 1853), the best Roman Catholic work on the much agitated controversy respecting the author of the *Philosophoumena* ascribed to Hippolytus; *Heidenthum und Judenthum* (Ratisbon, 1857); *Christenthum und Kirche, zur Zeit ihrer Grundlegung* (Ratisbon, 1860); and *Kirche und Kirchen* (Munich, 1861). The last named work, the most celebrated of all, grew out of two lectures delivered at Munich, and construed into an attack upon the temporal power of the pope. It satisfied neither the unconditional defenders of the temporal power nor its opponents. Several of his works have been translated into English and other foreign languages: that on paganism and Judaism by

N. Darnell ("The Gentile and the Jew, an Introduction to the History of Christianity," London, 1862), and that on "The Church and the Churches" by W. B. McCabe (London, 1862).

DONELSON, Daniel S., a general in the service of the confederate states, born in Tennessee, was graduated at West Point in 1825, and appointed brevet 2d lieutenant in the 3d artillery. He resigned after 6 months' service (Jan. 1826), and became a resident of Alabama. Entering the southern army during the civil war, he was appointed brigadier-general.

DOUBLEDAY, Abner, brigadier-general of volunteers in the U. S. army, born at Ballston Spa, Saratoga co., N. Y., June 26, 1819. He was engaged as a civil engineer from 1836 to 1838, and in the latter year was appointed a cadet at West Point. In 1842 he was graduated and obtained a commission in the 3d artillery. He served during the Mexican war in the 1st artillery, and was promoted to be 1st lieutenant in 1847. He was selected as one of the commission which was sent to Mexico in 1852 to investigate the Gardiner fraud, and was afterward stationed at Fort Duncan, Texas, until promoted to be captain in 1855. From 1856 to 1858 he served against the Indians in Florida, and was then ordered to Fort Moultrie, and remained there until its evacuation, Dec. 26, 1860, when the garrison retired to Fort Sumter. The first gun on the side of the Union was fired by him, April 12, 1861. After the evacuation of Fort Sumter he was placed in command of Fort Hamilton, New York, until June, 1861, when he was ordered to join Gen. Patterson in Pennsylvania, and promoted to be major in the 17th infantry. He was put in command of a battery, and afterward had charge of the defences on the right bank of the Potomac near Washington. In Feb. 1862, he was made brigadier-general of volunteers, and placed in command of the forts on the north bank of the Potomac. In the battle of Antietam, he commanded a division in the 1st army corps under Gen. Hooker.

DOW, Neal, brigadier-general of volunteers in the U. S. army, born in Portland, Me., in 1803. He is of Quaker parents, was bred to commercial and manufacturing pursuits, has twice been mayor of Portland, and served in the state legislature, where he introduced the famous prohibitory liquor law, known as the "Maine law." He was appointed colonel of the 13th Maine volunteers, Dec. 31, 1861, and joined Gen. Butler's expedition against New Orleans. He was commissioned brigadier-general of volunteers, April 28, 1862, and commands a brigade in the department of the gulf.

DRANESVILLE, a post village in Fairfax co., Va., on the Leesburg turnpike, about midway between Leesburg and Washington, where was fought, Dec. 20, 1861, a sharp action between the Union forces under Gen. E. O. C. Ord and the confederates commanded by Gen. Stuart. On Dec. 19 Gen. McCall, who commanded at Langley's on the extreme right of the Union position in front of Washington, ordered Gen. Ord's brigade, comprising 4 regiments of the Pennsylvania reserve, with Kane's regiment of "Bucktail rifles," 4 pieces of artillery, and a detachment of cavalry, in all about 4,000 men, to proceed on the succeeding day to Dranesville, which lay in a neutral region between the lines of the two armies, and seize a quantity of forage known to be deposited in the neighborhood. The troops marched at about 6 A. M., and at noon entered Dranesville. Two hours later the enemy made his appearance along the road leading to Centreville, his force being about equal to that of the Union troops, with two additional pieces of artillery. An artillery contest ensued with manifest advantage to the Union battery, and at the expiration of half an hour Ord pushed forward his whole line of infantry, ordering the men to use the bayonet alone. The confederates did not wait to receive the onset, but fled along the road to Fairfax Court House, leaving upward of 100 of their killed and wounded and a quantity of stores on the field. The Union loss was 7 killed, 61 wounded, and 3 missing. At 9 P. M. Gen. Ord returned to his camp with 40 loads of forage secured during the day and a few prisoners.

DRAYTON, Percival, an American naval officer, born in South Carolina. He entered the U. S. navy as midshipman in Dec. 1827, became lieutenant in Feb. 1838, and after cruising extensively in Brazilian waters, the Mediterranean, and the Pacific, was attached in 1852 to the national observatory at Washington. In 1854 he was ordered to ordnance duty at New York. He was promoted to be commander in 1855; joined the Paraguay expedition in 1858, and the next year was ordered to the Brazil squadron as aid to Flag Officer Shubrick. In 1860 he was assigned to ordnance duty at Philadelphia, and was still there at the outbreak of the civil war. Although strongly bound by family ties to the seceding states, he remained loyal to the national flag, and in the expedition to Port Royal commanded the steamer Pocahontas, his brother, Gen. T. F. Drayton, commanding at the same time the confederate troops on Hilton Head island. Commander Drayton was afterward transferred to the Pawnee, and in 1862 was promoted to be captain and ordered to the new Ericsson iron battery Passaic.—Thomas F., brother of the preceding, a general in the service of the confederate states, born in South Carolina, was graduated at West Point in 1828 and appointed 2d lieutenant in the 6th infantry. In 1836 he resigned his commission, and for two years was resident engineer of the Charleston, Louisville, and Cincinnati railroad, after which he became president of the Charleston and Savannah railroad company. When the civil war broke out he joined the southern army, and was appointed brigadier-general and placed in command of the 3d military district in the department of South Carolina. He participated in the defence of Hilton Head, where he owned a plantation, with many slaves, against the attack of Flag Officer Du Pont.

DU CHAILLU, Paul B., a French traveller, born in southern France about 1829. He is the son of a French merchant who had an establishment on the Gaboon river on the W. coast of Africa. Mr. Du Chaillu was educated in France, but went while still young to Africa, and lived there for several years engaged in the affairs of his father's firm. He next visited the United States, where he was naturalized. In Oct. 1855, he returned to W. Africa for the purpose of making a tour of exploration in the interior, and after remaining some time at a missionary station on the Gaboon, started up the Muni river in a canoe in July, 1856. A full account of his perilous journey, which lasted 3 years, was published under the title of "Explorations and Adventures in Equatorial Africa" (New York and London, 1861). This attracted great attention, particularly in England, where Mr. Du Chaillu has resided since its publication, and where a bitter controversy arose concerning the truthfulness of his reports, Professor Owen and Sir Roderick Murchison defending the traveller, while chief among his opponents was Professor Gray of the British museum. Mr. Du Chaillu was the first white man who ever hunted the gorilla. He brought back with him to the United States a collection of skins and skeletons of that animal, the most valuable parts of which were purchased by the British museum.

DUG SPRING, a place situated 19 m. S. W. from Springfield, Mo., which was the scene of a brisk engagement between the national troops under Gen. Lyon and the confederates of Gen. McCulloch's army, Aug. 2, 1861. It was reported to Gen. Lyon that McCulloch proposed to attack Springfield by two columns, moving from Cassville and Sarcoxie; and he accordingly, on Aug. 1, ordered his entire command, with the exception of a small guard left at Springfield, to rendezvous at a point 10 m. S. of that place, where the roads from Sarcoxie and Cassville meet. On the evening of that day the whole column had reached the appointed spot, and on the morning of the 2d moved forward in the direction of Cassville, though slowly and with much suffering, owing to the intense heat of the weather, the dust of the roads, and the want of water. Arriving at Dug Spring in the afternoon, the Union forces came upon the confederate advance, and offered battle, but the latter did not respond; thereupon Gen. Lyon ordered a retrograde movement, for the purpose of drawing them into a contest on ground more advantageous for his troops; this was so far successful, that at about 5 o'clock the confederate infantry made an advance, numbering about 500. The Union cavalry met them with a discharge from their carbines, and at the same time a gallant charge of only 25 regulars of the U. S. infantry threw the enemy into confusion; this attack of the foot, being followed up by a furious charge of cavalry, resulted in the complete rout of the confederate force. They retired, and a body of cavalry which came to their aid were dispersed by several well directed shots from a battery. A pursuit was commenced, it being reported that the whole army of Gen. McCulloch was within a few miles; after a painful march of a day, however, the confederates still retreating, Gen. Lyon thought it prudent to return to Springfield, not deeming himself sufficiently secure from surprises and a flank movement from the direction of Sarcoxie. The confederate loss in this affair was 40 killed and 100 wounded; that of the Union force was 9 killed and 30 wounded.

DUMONT, Ebenezer, brigadier-general of volunteers in the U. S. army, born in Switzerland co., Ind., about 1816. He studied law, was admitted to the bar of Indiana, and at the outbreak of the Mexican war in 1846 was appointed lieutenant-colonel of the 4th regiment of volunteers from that state, and distinguished himself at the battle of Huamantla. He was afterward elected to the state legislature, was chosen speaker of the house, and for many years was president of the Indiana state bank. He was also manager of the sinking fund of the state. On the breaking out of the civil war in 1861 he took the field at the head of the 7th Indiana regiment, and served in western Virginia, at the battles of Laurel hill, Rich mountain, and Carrick's ford. He was made a brigadier-general of volunteers, Sept. 3, 1861, and on Sept. 12 was engaged in the battle of Cheat mountain. After the withdrawal of the confederate forces from western Virginia, Gen. Dumont was ordered to Kentucky, where he took command of the 17th brigade of the army of the Ohio in Jan. 1862. On May 5, 1862, he attacked and routed at Lebanon, Ky., a large force of cavalry, killing many and capturing 150 prisoners. In Oct. 1862, he was commanding the 12th division of Gen. Buell's army, and on the 14th of that month was elected a representative to congress by the republicans of the 6th district of Indiana.

DUNCAN, Johnson K., a general in the service of the confederate states, born in Pennsylvania, was graduated at West Point in 1849, appointed brevet 2d lieutenant in the 2d artillery, transferred in the same year to the 3d artillery, and promoted to be 1st lieutenant in 1853. He resigned in 1855, and entering the southern army during the civil war of 1861, obtained the commission of colonel, and was afterward appointed brigadier-general from Louisiana. He commanded Forts Jackson and St. Philip at the time of the bombardment by Flag Officer Farragut, and became a prisoner of war when those works surrendered.

DU PONT, Samuel Francis, rear admiral in the U. S. navy, born at Bergen Point, N. J., Sept. 27, 1803. His grandfather and father were of French extraction, and emigrated to the United States in 1799. At 12 years of age he was commissioned a midshipman in the navy, sailed in 1817 on his first cruise in the Franklin (74), under Commodore Stewart, and for many years was employed in the ordinary routine duties of his profession. In 1845, being then a commander, he was ordered to the Pacific, in command of the frigate Congress, bearing the broad pennant of Commodore Stockton, and during the Mexican war saw much active service on the California coast. In Feb. 1848, he landed at San José, with 100 marines and sailors, and, defeating and dispersing a Mexican force 5 times as numerous, rescued a small party under Lieut. Heywood, who had been beleaguered in the mission house. In 1856 he attained the rank of captain, and in the succeeding year was placed in command of the steam frigate Minnesota, which conveyed Mr. Reed, the American minister, to China. After a cruise of two years in the China waters he returned to the United States, and on Jan. 1, 1861, was appointed to the command of the Philadelphia navy yard. In the ensuing summer he was consulted by the secretary of the navy with reference to the occupation of a central harbor or depot on the southern coast, and, having recommended Port Royal, he was put in command of the south Atlantic blockading squadron, and intrusted with the special duty of attacking that place. He sailed from Fortress Monroe, Oct. 29, in his flag ship the Wabash, accompanied by a fleet of 50 sail, comprising the vessels of war of his squadron, and transports conveying the land forces under Gen. T. W. Sherman. On Nov. 4 and 5 the fleet, after having been scattered by a violent storm, rendezvoused off Port Royal, and on the 7th an attack was made upon two strong forts on Hilton Head and Bay Point, which defended the harbor. After a severe engagement of 4 hours, in which the squadron led by the Wabash steamed thrice in an elliptic course between the forts, delivering their fire at each in turn, the enemy evacuated their works, abandoning every thing but their muskets. Flag Officer Du Pont followed up this advantage with vigor at different points along the southern coast, the naval operations against which were invariably attended with success. He also succeeded in enforcing a more effective blockade than the Union fleets had been able previously to maintain. In Aug. 1862, he was nominated by the president one of the 9 rear admirals on the active list. Apart from his sea service, which extends over a period of 25 years, Admiral Du Pont has served on various important naval boards, including the lighthouse board, the naval retiring board, and the boards for providing a code of rules for the service and for the examination of midshipmen. He also had a considerable share in the organization of the naval school at Annapolis, and is the author of a report on the use of floating batteries for coast defence, which has been republished and highly commended in England by Sir Howard Douglas, in his work on naval gunnery.

DURYEE, Abram, brigadier-general of volunteers in the U. S. army, born in the city of New York, April 29, 1815. He engaged in business as a mahogany merchant, and accumulated a fortune. After serving 16 years in the New York state militia, at first as private, he became colonel of the 7th regiment, national guard, in 1849, and filled that post for 10 years. In 1861 he organized a regiment of zouaves, the 5th New York volunteers, which he commanded at the battle of Great Bethel. He was commissioned brigadier-general of volunteers, Aug. 31, 1861. At the second battle of Bull run he was wounded, and at the battle of Antietam he commanded a brigade in Gen. Ricketts's division of Hooker's (the 1st) army corps.

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EARLY, Jubal A., a general in the service of the confederate states, born in Virginia about 1818, was graduated at West Point in 1837, was appointed a 2d lieutenant in the 1st artillery, was transferred to the 2d artillery in July, 1838, and resigned in the same month to study law and practise it in Virginia, where he became a member of the legislature. He was major of a regiment of Virginia volunteers in the Mexican war, serving from Jan. 1847, to Aug. 1848. After the breaking out of the civil war in 1861, he entered the army of Virginia, became a colonel, and commanded a brigade at the battle of Bull run. His arrival upon the field at a critical period of the day contributed greatly to give the victory to the confederates and was regarded as very creditable to him. He is now (Dec. 1862) among the first on the list of brigadier-generals in the confederate army.

EATON, Amos, an American botanist, born about 1776, died in Troy, N. Y., May 10, 1842. He fitted himself for college while serving an apprenticeship to a blacksmith, was graduated at Williams college in 1799, studied law under Alexander Hamilton, and was admitted to the bar. He was appointed agent and surveyor of the Livingston estates on the Hudson river, studied chemistry, mineralogy, and botany, and commenced lecturing on the natural sciences at Williams college in 1817, and the next year, by invitation of Gov. De Witt Clinton, at Albany. In 1820 Gen. Stephen Van Rensselaer employed him to make a geological survey of the region through which the Erie canal afterward passed, which was published in 1824. Gen. Van Rensselaer soon after established and endowed the Rensselaer institute at Troy, of which he made Mr. Eaton senior professor.

He published an "Index to the Geology of the Northern States" (1818); "The Philosophical Instructor" (1824); "A Geological Text Book;" "A Manual of the Botany of North America" (Albany, 1833; changed to "North American Botany" in the 8th and subsequent editions), the first popular text book of that science published in the United States; and a "Treatise on Engineering and Surveying" (4to., New York).

ECHOLS, William Henry, a general in the service of the confederate states, born in Alabama about 1837, was graduated at West Point in 1858, and appointed brevet 2d lieutenant in the topographical engineers. He resigned, March 21, 1861, and entered the confederate army, in which he is a brigadier-general. He was lieutenant-colonel of and commanded the 27th Virginia regiment at the battle of Bull run. He took command of the troops in western Virginia in Oct. 1862, but retreated before the advance of Major-Gen. Cox at the head of the U. S. forces.

ELIOT, Sir John, an English statesman, born at Port Eliot, Cornwall, April 20, 1590, died in the tower of London, Nov. 27, 1632. He studied about 3 years at Oxford; then travelled on the continent, where he contracted an intimacy with George Villiers, afterward duke of Buckingham; became a barrister, and on Villiers's elevation to power was knighted and appointed vice-admiral of Devonshire and chairman of the committee of stannaries. He was a member of the parliament which met in Feb. 1624, and at once took sides with the popular party. His eloquence and fearlessness soon made him recognized as a leader. He was returned to the parliaments of 1625 and 1626, and having now suspended his intimacy with Buckingham, was chosen one of the managers on the part of the house when the royal favorite was impeached. His eloquent speech on this occasion caused his committal to the tower, but the indignation of the commons forced the government to release him after 8 days. Parliament was soon afterward dissolved, and the king determined to raise money by forced loans. Eliot, Hampden, and others who resisted this unconstitutional impost were thrown into prison; but Charles was forced to summon another parliament in less than a year, and Eliot was released just in time to take his seat at the opening of the session, March 17, 1628. In this session he delivered a remarkable speech in support of the petition of right. On March 2, 1629, he presented a remonstrance declaring "that the receiving of tonnage and poundage, and other impositions not granted by parliament, is a breach of the fundamental liberties of this kingdom, and of his majesty's royal answer to the petition of right;" together with three resolutions declaring enemies to the realm whoever should make any innovation in religion, or should counsel the taking of tonnage and poundage, or should voluntarily pay the same. The speaker refused to put the resolutions, but Eliot read them himself, and they were carried amid the utmost confusion. Two days afterward he was arrested. Charles offered to release him on bail, on condition that he should profess sorrow for having offended, or give sureties for good behaviour; but he refused, and was sentenced by the court of king's bench to be imprisoned during the royal pleasure and fined £2,000. He occupied himself during his imprisonment in composing a philosophical treatise on "The Monarchy of Man," which has been preserved, but not published. His health sank under the rigors of his confinement. As he grew worse the severity of his gaolers increased; his friends were not allowed to visit him; in the depth of winter he was deprived of fire; and when he was dead his son's petition to have the body for burial was denied.—See "Life of Sir John Eliot," rewritten and enlarged, from original sources, by John Forster (London, 1863).

ELIZABETH CITY. After the capture of Roanoke island by Gen. Burnside and Flag Officer Goldsborough, an attack was made, Feb. 10, 1862, upon Elizabeth City, N. C., on the Pasquotank river, about 35 or 40 miles from that island. The attacking force comprised 14 vessels under Commander S. C. Rowan. The place was defended by a fort mounting 4 guns, and a fleet of 7 steamers and a schooner commanded by Flag Officer W. F. Lynch; opposite the fort the schooner, carrying two heavy rifled guns, was anchored, leaving a channel of only half a mile in width, through which the squadron must pass to reach the confederate steamers beyond. Commander Rowan at once dashed forward through this narrow passage, regardless of the fire from the fort and schooner, from which he suffered no damage, and made a furious assault on the fleet above. The plan of attack was to run directly upon the vessels and end the contest by a hand-to-hand fight; the result was that, after a battle of not more than a quarter of an hour in duration, the confederate fleet was broken up, abandoned by the crews, and set on fire. Thus 6 vessels were burned, and one was captured. The fort was also abandoned in haste. An attempt was made on the part of the confederates to burn the town, but it was only partially successful.

ELLET, Charles, jr., an American engineer, born at Penn's Manor, on the Delaware, 25 m. above Philadelphia, Jan. 1, 1810, died at Cairo, Ill., June 21, 1862. He planned and built the first wire suspension bridge in the United States, that across the Schuylkill at Fairmount, Philadelphia; he designed and built the first suspension bridge across the Niagara river below the falls, and also the first one at Wheeling, Va. For the Virginia central railroad he constructed a remarkable temporary track leading over the Blue ridge, and he was also prominent in the works to improve the navigation of the Kanawha river. He was employed on the Baltimore and Ohio railroad, the Reading railroad, and other important enterprises of the kind, and was president of the Schuylkill navigation company in 1846–'7. Previous to the breaking out of the civil war in 1861, he had removed to Washington, where he early devoted much attention to the use of steam vessels as rams in naval warfare. He also projected a plan for cutting off the confederate army at Manassas, and communicated it to Gen. McClellan, by whom it was not adopted. He subsequently wrote two pamphlets severely censuring that general's mode of conducting the war, which excited much attention and comment. The navy department having declined to construct rams for service on the Mississippi according to his plan, he applied to Mr. Stanton, secretary of war, by whom it was adopted. Mr. Ellet was commissioned as colonel of engineers, and in a short time converted into rams some 10 or 12 powerful steamers of light draught built for use on the Ohio and Mississippi rivers. This was done by building bulkheads of heavy timbers around their machinery, and by strengthening their bows with timbers internally and a sheathing of iron bars externally. With this fleet Col. Ellet rendered great assistance in the naval battle off Memphis on June 4, where, going boldly forth in advance of the line of battle, he sunk and disabled several of the enemy's vessels. Exposing himself gallantly under fire, he was struck by a musket ball above the knee, from the effects of which he died. He wrote "An Essay on the Laws of Trade, in reference to the Works of Internal Improvement in the United States" (8vo., Richmond, 1839); a paper "On the Physical Geography of the Mississippi Valley, with suggestions as to the Improvement of the Navigation of the Ohio, and other Rivers," published in "Transactions of the Smithsonian Institution" (4to., Washington, 1851); "The Mississippi and Ohio Rivers, containing Plans for the Protection of the Delta from Inundation, and Investigation of the Practicability and Cost of improving the Navigation of the Ohio and other Rivers by means of Reservoirs; with an Appendix on the Bars at the Mouths of the Mississippi" (8vo., Philadelphia, 1853); a pamphlet on "Coast and Harbor Defences, or the Substitution of Steam Battering Rams for Ships of War" (Philadelphia, 1855); and many other scientific papers.—His brother, Alfred W. Ellet, who held a commission under him as lieutenant-colonel in the ram fleet, has lately been appointed brigadier-general of volunteers.

ELLIOTT, Washington L., brigadier-general of volunteers in the U. S. army, was appointed from Pennsylvania a 2d lieutenant of mounted rifles, May 27, 1846, became 1st lieutenant in July, 1847, regimental quartermaster in April, 1852, and captain in July, 1854. He distinguished himself in conflicts with the Navajoes in New Mexico in Sept. 1858, in 1859 had command of Fort Bliss in Texas, on Nov. 5, 1861, became major of the 1st cavalry, and was appointed brigadier-general of volunteers, June 11, 1862.

ELZEY, Arnold, a general in the service of the confederate states, born in Maryland about 1815. His name was originally Arnold E. Jones, but it was legally changed in 1838. He was graduated at West Point in 1837 and appointed a 2d lieutenant in the 2d artillery; became an assistant commissary of subsistence in Nov. 1837, and 1st lieutenant in Nov. 1839; was brevetted a captain for gallantry at Contreras and Churubusco, Aug. 20, 1847; was adjutant of his regiment from Dec. 1847, to Jan. 1848; became a captain in Feb. 1849; resigned his commission April 25, 1861, entered the confederate service, and at the first battle of Bull run took command of a brigade of the army of the Shenandoah after Gen. E. K. Smith was disabled by a wound, and was highly commended by Gen. J. E. Johnston in his report of the battle. It was this force which, arriving upon the field when both armies were exhausted by the fight, turned the scale against the Union army, and caused its defeat. He is now (Dec. 1862) near the head of the list of brigadier-generals in the confederate army.

EMINENT DOMAIN (in the Roman law, *dominium eminens*). *Dominus* and *magister* are both translated by the word "master;" but *dominus* means one who is master by the right of property, while *magister* means one who is master by the right of superiority. Hence *dominium* as a law term is quite accurately represented by the word property; and eminent domain is the right of property possessed by a state, which is higher over all the goods and valuables within the state than that of any individual. The phrase means, in practice, the right inherent in any sovereignty of taking possession of any valuable thing, be it real or personal, and using it for a public purpose. Where, in the theory of the law, all property is held by tenure from the sovereign, the exercise of this right on the part of the sovereign may be regarded as only a resumption of that which it originally granted; and all property may be supposed to rest on a title to which the condition was annexed that it might be thus resumed by the original grantor. This may not be the theory of the title to property in this country (see Tenure, vol. xv.), and then the right of eminent domain would rest with us on the right of superiority and power. Whatever be its ground, it is entirely certain that the right of eminent domain, or the right to take private property for public use, is distinctly asserted and frequently exercised, both by the national government and by that of the several states. One condition is always affixed to it, viz., that the public good requires that private property should thus be taken for public use; and this fact must be ascertained by the appropriate authority. Another condition is annexed to the exercise of this power by the constitution of the United States, and by that of many states, and is universal in practice, and would doubtless be held to be always implied in law. It is that adequate compensation be made to those from whom the property is taken. The most common instances of the exercise of this power are in the case of lands taken for roads or canals; but it is, we conceive, quite certain, that the principle itself is wholly unlimited, and that by virtue of it any property may be taken by the sovereign power from any owner, provided the public good demands this, and compensation is made to the owner from whom the property is taken.

EMORY, William Helmsley, brigadier-general of volunteers in the U. S. army, born in Maryland about 1812, was graduated at West Point and appointed a brevet 2d lieutenant in 1831; became a 3d lieutenant in the mounted rangers in June, 1832, and a 2d lieutenant in the 4th artillery in July, 1832; resigned Sept. 30, 1836; was appointed a 1st lieutenant in the topographical engineers, July 8, 1839; acted as aide-de-camp to Gen. Kearny in California in 1846–'7; was brevetted a captain for gallantry in the battle of San Pascual, Dec. 6, 1846, and major for gallantry in the battles of San Gabriel and the plains of Mesa, Cal., Jan. 9, 1847; was appointed major of the 3d dragoons in April, 1847, but declined; became lieutenant-colonel in a regiment of volunteers for the Mexican war, Sept. 30, 1847; served as astronomer to the commission to survey the boundary between the United States and Mexico in 1849–'50; was promoted to the rank of captain in April, 1851; was again appointed astronomer to the same commission in Sept. 1851; and on Aug. 4, 1854, became a member of the commission. On March 3, 1855, he became major of the 2d cavalry, and in May was transferred to the 1st cavalry. On the breaking out of the civil war in 1861, he was serving in New Mexico, but a letter of resignation signed by him was presented to the war department, and accepted, May 9, 1861. Meanwhile he brought the forces under his command in good order to Kansas, and hastening to Washington asked that this resignation might be withdrawn, saying that his friends in whose hands it had been left erred in presenting it, as the contingency in which he had directed it to be presented had not occurred. His request, being warmly seconded by persons of great influence, among others by Gen. Scott, was granted; and he was appointed, May 14, 1861, lieutenant-colonel of the 5th cavalry. He afterward served in the army of the Potomac, was appointed brigadier-general of volunteers March 17, 1862, and on Dec. 5 sailed from Fortress Monroe in command of a division of a southern expedition.

ERDMANN, Johann Eduard, a German philosopher, born at Molmar, Livonia, June 13, 1805. He studied theology at the university of Dorpat, afterward attended the lectures of Schleiermacher and Hegel at Berlin for two years, and returning to his native place, became in 1828 pastor and first preacher there. In 1832 he returned to Berlin, and in 1836 was appointed professor of philosophy at Halle. His principal works are: *Versuch einer wissenschaftlichen Darstellung der Geschichte der neuern Philosophie* (vols. i. to v., Leipsic, 1834–'51); *Ueber Glauben und Wissen* (Berlin, 1837); *Leib und Seele* (Halle, 1837); *Natur und Schöpfung* (Leipsic, 1840); *Grundriss der Psychologie* (1840); *Grundriss der Logik und Metaphysik* (1841); *Vermischte Aufsätze* (1847); *Ueber Lachen und Weinen* (Berlin, 1850); *Vorlesunge über den Staat* (Halle, 1851); *Psychologischen Briefe* (Leipsic, 1851); *Ueber den poetischen Reiz des Aberglaubens* (Halle, 1851); and *Ueber die Langeweile* (Berlin, 1852).

ESPY, James P., an American meteorologist, born in Washington co., Penn., May 9, 1785, died in Cincinnati, O., Jan. 24, 1860. He early manifested a fondness for meteorological science, and after some years of investigation announced a theory of the origin and causes of storms, which led to protracted discussions on the subject in the scientific journals. In 1841 his "Philosophy of Storms" was published simultaneously in Boston and London. He had previously communicated to the British association a paper on storms, and another on the "Four Daily Fluctuations of the Barometer." In 1843 he was assigned by the war department at Washington to a post in connection with the observatory, that he might prosecute meteorological investigations, and collated the reports from the different observers throughout the country. The information thus obtained was published in several quarto volumes by the department.

EUCHRE, a game of cards, usually played by 2 or 4 persons with a pack from which all the cards from 2 to 6 inclusive have been withdrawn. Before commencing the game, the players draw in rotation for the deal, which belongs to him who first draws a knave. The pack having been cut by his opponent, or, if in 4-handed euchre, by his right hand adversary, the dealer distributes 5 cards to each player, including himself, commencing at his left, and turns up the 11th card (in 4-handed euchre the 21st). The cards have the same relative value as in whist, except that the knave of trumps, called the right bower, is the highest card in the pack, and the other knave of the same color, called the left bower, the next highest (so that if the knave of spades be the right bower, the knave of clubs is the left), after which come ace, king, &c. Players must in all cases follow suit, and the left bower is invariably to be considered trumps. The game consists of 5 points. The deal having been completed, the elder hand has the privilege of deciding whether the suit turned up shall be trumps. If he desires to retain it as such, he "orders up" the trump card, in which case the dealer rejects a card from his hand and assumes that which he has turned up. In that case, however, the elder hand must take 3 tricks, constituting a point, or he is, technically speaking, "euchred," that is, his adversary is entitled to score 2 points. If, on the other hand, he does not choose to order up the card, he says: "I pass," and the same privilege, with similar conditions, belongs to the next player, and so on. When all the players, including the dealer, have passed, the latter turns down the card, and the elder hand has the privilege of designating the suit which shall be trumps, which must however be another than that previously turned up. If he names a trump, he must score his point or be euchred; and if he is unwilling to take the risk, he passes again. When all the players have passed for the second time, they throw up their cards, and the elder hand succeeds to the deal. A player taking all 5 tricks makes what is called a "march," and is entitled to score 2; taking either 3 or 4 tricks, he scores but 1. In 4-handed euchre, in which the players sitting opposite to each other are partners, as in whist, a player, having good cards, will sometimes desire to "play the hand alone," without the assistance of his partner. If under these circumstances he makes a march, he scores 4 points; but if euchred, his adversaries score 4. The game of euchre is peculiar to the United States, where it is a universal favorite, being preferred by many to whist.

EVANS, Marian C., an English authoress, born in the north of England about 1820. Her first important literary work was a translation from the German of Strauss's "Life of Christ" (3 vols. 8vo., London, 1846). In 1856 she contributed to "Blackwood's Magazine" a series of tales under the title of "Scenes of Clerical Life;" they were republished in two volumes in 1857. She then published, under the pseudonyme of "George Eliot," a remarkable novel entitled "Adam Bede" (1858), in which she depicted some of the humbler phases of English life with great vividness and accuracy. The book made a deep impression, and its authorship was long an interesting subject of inquiry. Her subsequent works are: "The Mill on the Floss" (1859); "Silas Marner, the Weaver of Raveloe" (1861); and "Romola," a story of Florentine life in the 15th century, begun in the "Cornhill Magazine" in 1862.

EVANS, Nathan George, a general in the service of the confederate states, born in Darlington district, S. C., about 1829, was graduated at West Point in 1848, and appointed a brevet 2d lieutenant in the 1st dragoons, and in Sept. 1849, a 2d lieutenant in the 2d dragoons; became a 1st lieutenant in the 2d cavalry in March, 1855, and a captain in May, 1856; distinguished himself in a battle with the Comanches in Texas, Oct. 1, 1859; resigned his commission Feb. 27, 1861, entered the confederate service, was made a colonel, and commanded a brigade in the battle of Bull run, where his conduct was highly approved in the report of Gen. J. E. Johnston; was promoted to be a brigadier-general, and commanded the confederates in the battle of Ball's bluff, Oct. 19, 1861.

EWELL, Richard Stoddard, a general in the service of the confederate states, born in the district of Columbia about 1820, was graduated at West Point in 1840, and appointed a brevet 2d lieutenant in the 1st dragoons; became a 1st lieutenant in Sept. 1845; was brevetted a captain for gallantry at Contreras and Churubusco, Aug. 20, 1847; became captain in Aug. 1849; distinguished himself in a battle with the Apaches in New Mexico, June 27, 1857; resigned his commission in the U. S. army, May 7, 1861, entered the confederate service, was appointed a brigadier-general, took part in the battle of Blackburn's ford, July 18, 1861, and was at Bull run, but did not take an active part in the battle. He was subsequently promoted to be a major-general and appointed to the command of a corps in the army of Virginia. He accompanied Lee in his movement against Pope in the latter part of Aug. 1862, and on the 27th was defeated by Hooker at Kettle run, near Manassas Junction, with considerable loss. He took part in the battles fought near Bull run, Aug. 28–30, and also in the succeeding Maryland campaign, in the course of which he was severely wounded and obliged for a time to retire from duty.

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FAIR OAKS. See Chickahominy.

FARMINGTON. See Corinth.

FARRAGUT, David Glascoe, an American naval officer, born near Knoxville, Tenn., in 1801. He entered the navy as midshipman at the age of 11, and his first service was on board the Essex, Capt. David Porter, in which while still a boy he witnessed one of the most terrible sea fights on record. Before the loss of the Essex he served as acting lieutenant on board the Atlantic, an armed prize. On Jan. 1, 1821, he was promoted to be lieutenant and ordered to the West India station. Afterward he was on duty at the Norfolk navy yard, where, except for two years during which he cruised in the Vandalia on the Brazil station, he remained until 1833. He then returned to the Brazilian coast, as executive officer of the sloop of war Natchez. In 1838 he was in the West Indies. In 1841 he was commissioned commander and ordered to the sloop of war Decatur, of the Brazil squadron. After 3 years' leave of absence he was ordered to the Norfolk navy yard in 1845, and remained there until 1847, when he took command of the sloop of war Saratoga, of the home squadron. He was again on duty for a while at Norfolk; in 1851 was appointed assistant inspector of ordnance; in 1854 became commander of the Mare island (Cal.) navy yard; in Sept. 1855, was commissioned captain; and from 1858 to May, 1860, was in command of the steam sloop of war Brooklyn, of the home squadron. In 1861 he was a member of the naval retiring board which met in October at New York. When the expedition against New Orleans was fitted out, he was intrusted with the command of the naval forces, and hoisting his flag on board the Hartford, sailed from Philadelphia in the latter part of Jan. 1862. On reaching the gulf of Mexico he organized the "western gulf blockading squadron," of which he is still in command (Dec. 1862), entered the Mississippi in March, and after a terrific bombardment passed Forts Jackson and St. Philip, April 24, destroyed a large fleet of confederate gunboats, and proceeded up the river to New Orleans. On the 25th he silenced two heavy batteries, and at noon of the same day the city lay at the mercy of the guns of his fleet. After the land forces under Gen. Butler had occupied the place, Flag Officer Farragut proceeded to Vicksburg, for the purpose of reducing that place; and, running his vessels safely past the powerful batteries of the enemy, communicated with Flag Officer Davis, who had brought down another flotilla from the upper Mississippi. Notwithstanding the gallant exertions of the two commanders, the attack failed, owing to the lack of a sufficient land force to coöperate; and Flag Officer Farragut repassed the batteries, and withdrew his fleet to Pensacola. On July 11, upon the recommendation of the president, he received the thanks of both houses of congress, and on the reorganization of the navy in the same month was placed first on the list of rear admirals. While in command of the western gulf blockading squadron in the following autumn, he captured Corpus Christi, Sabine Pass, and Galveston.

FAUNTLEROY, Thomas T., a general in the service of the confederate states, born in Virginia, entered the U. S. army as major in the 2d dragoons, June 8, 1836. He was promoted to be lieutenant-colonel in 1846, but did not serve with his regiment in Mexico. He became colonel of the 1st dragoons in 1850. Resigning his commission May 13, 1861, he entered the southern army, and was appointed brigadier-general. He soon afterward resigned this commission also and retired to private life.

FERRERO, Edward, brigadier-general of volunteers in the U. S. army, born of Italian parents in Granada, Spain, Jan. 10, 1832. He was brought to the United States in his infancy, and at the age of 15 entered a French importing house in New York. Soon after reaching manhood he succeeded his parents in a dancing school, and for several summers taught dancing in the military academy at West Point. In 1861 he raised the 51st regiment New York volunteers (the "Shepard Rifles"), at the head of which he proceeded in November to Annapolis. Thence he accompanied Gen. Burnside's expedition to Roanoke island and Newbern, at both which places he highly distinguished himself. Gen. Burnside gave him the command of a brigade under Gen. Reno, and he remained at Newbern until his division was ordered to the Potomac in July, 1862. During Gen. Pope's campaign in Virginia he continued to serve in the division of Gen. Reno, who asked the president for his promotion. He was in the battles of South mountain and Antietam, and for his bravery and efficient services in the latter engagement was appointed brigadier-general of volunteers, Sept. 19. He now (Dec. 1862) commands the 2d brigade of Gen. Sturgis's division in the 9th army corps.

FERRY, Orris S., brigadier-general of volunteers in the U. S. army, born in Bethel, Conn., Aug. 15, 1823. He was graduated at Yale college in 1844, studied law, and commenced practice at Norwalk, Conn. In 1855–'6 he was a member of the state senate; from 1856 to 1859 district attorney for Fairfield county; and in 1860–'61 representative in congress. In July, 1861, he took the field as colonel of the 5th regiment Connecticut volunteers, and joined Gen. Banks's corps in Maryland. He was appointed brigadier-general of volunteers, March 17, 1862, and assigned to a brigade in Shields's division, from which he was transferred to a command in Gen. Peck's division of the 4th army corps under Gen. Keyes.

FLINT, Austin, an American physician, born in Petersham, Mass., in 1812. He was educated at Amherst and Harvard colleges, and graduated M.D. at Harvard in 1833. After practising successively in Boston and Northampton, he removed in 1836 to Buffalo; in 1844 was appointed professor of the institutes and practice of medicine in the Rush medical college at Chicago; resigned after one year, and in 1846 established the "Buffalo Medical Journal," which he edited for 10 years. In connection with Professors White and Hamilton he founded in 1847 the Buffalo medical college, in which he was for 6 years professor of the principles and practice of medicine and of clinical medicine. From 1852 to 1856 he filled the chair of the theory and practice of medicine in the university of Louisville, Ky., and then accepted a professorship of pathology and clinical medicine in Buffalo. From 1858 to 1861 he spent the winters in New Orleans as professor of clinical medicine in the school of medicine and visiting physician to the charity hospital. In 1859 he removed to New York, where two years later he was appointed professor of the principles and practice of medicine in the Bellevue college hospital, and of pathology and practical medicine in the Long Island college hospital, and visiting physician to Bellevue. Dr. Flint has published "Clinical Reports on Continued Fever" (Buffalo, 1852); "Clinical Report on Chronic Pleurisy" (1853); "Clinical Report on Dysentery" (1853); "Physical Exploration and Diagnosis of Diseases affecting the Respiratory Organs" (1856); and "Practical Treatise on the Pathology, Diagnosis, and Treatment of Diseases of the Heart" (1859).

His essays "On the Variations of Pitch in Percussion and Respiratory Sounds," and "On the Clinical Study of the Heart Sounds in Health and Disease," received the first prizes of the American medical association in 1852 and 1859. A translation of the former of these and of his clinical reports appeared in Paris in 1854.

FLORIDA BLANCA, Josef Monino, count of, a Spanish statesman, born in Murcia in 1728, died in Seville in 1809. His family was noble, but poor. He became an advocate, was appointed fiscal to the tribunal of the council of Castile, and made a report upon the affair of the suppression of the Jesuits, which led to his appointment as ambassador to the court of Rome. In 1777 he became premier to Charles III., and his administration of 15 years was one of the most successful and brilliant epochs of Spanish history. He built extensive roads, canals, bridges, and conduits; created more than 60 agricultural societies and numerous philanthropic institutions; founded the national bank of St. Charles, and the Spanish company of the Philippines; made treaties of commerce with the Porte, and concluded a treaty of amity and peace with Portugal, which quieted the disputes about the South American colonies, and treaties with the emperor of Morocco and Hyder Ali; was the first to propose and to carry into effect with Russia and Prussia a condition of armed neutrality, by means of which he hoped to deprive England of the results of her maritime superiority; sought to avert the war which in spite of his efforts was declared against Spain by England in 1778, and succeeded in making its burdens lighter on the people than those of any previous one of equal duration; made a treaty with Tripoli; effectually punished the Algerine pirates; opened the trade with America to the world; reduced direct taxes and imposts; introduced great and valuable reforms in the administration of justice; ordered the taking of a census; and caused the preparation of a geographical gazetteer of Spain. Notwithstanding such important services, in 1792, after having been for 3 years the premier of the imbecile Charles IV., he was imprisoned in the castle of Pampeluna, where but for the assistance of his brother he would have perished from starvation. He was at length permitted to retire to Murcia. When the Spaniards rose against Napoleon in 1808 he was called to the presidency of the central junta of the kingdom, but soon sank under the onerous duties of that office. Among his published works are: *Respuesta fiscal sobre la libre disposicion, patronato y proteccion inmediato de S. M. en los bienes occupados á los Jesuitas* (Madrid, 1768); and *Juicio imparcial sobre las lettras en forma de breve, publicados por la curia Romana*, &c. (1768-'9).

FOOTE, Andrew Hull, a rear admiral in the U. S. navy, born in New Haven, Conn., Sept. 12, 1806. He is the son of Samuel A. Foote, formerly governor of Connecticut and a senator in congress, where in 1830 he offered the resolution "on the public lands" which gave rise to the debate on nullification between Daniel Webster and Robert Y. Hayne. At the age of 16 young Foote entered the navy as acting midshipman, and made his first cruise in the schooner Grampus, which formed part of the squadron sent in 1823 to chastise the pirates in the West Indian archipelago. In 1824 he obtained his warrant as midshipman, in 1827 he became a passed midshipman, and in 1830 was commissioned a lieutenant. In 1833 he was flag lieutenant of the Mediterranean squadron, and in 1838 circumnavigated the globe with Commodore Read as 1st lieutenant of the sloop of war John Adams, participating in an attack on the pirates of Sumatra, and rendering assistance to the American missionaries in Honolulu, who had been persecuted by the French naval commander on that station. While stationed at the naval asylum in 1841-'3 he prevailed upon many of the inmates to give up their spirit rations, being one of the first to introduce the principle of total abstinence from intoxicating drinks in the navy; and during a cruise in the Cumberland in 1843-'5, he not only induced the crew to forego the use of spirits, but personally superintended their religious instruction, delivering every Sunday an extemporaneous sermon, at which upward of 200 sailors attended. In 1849, in command of the brig Perry, he joined the squadron under Commodore Gregory on the African coast, where during the next 2½ years he was actively and successfully engaged in suppressing the slave trade. In connection with this cruise he published in 1852 a work entitled "Africa and the American Flag." After serving on the naval retiring board, he was appointed in 1856 to the command of the sloop Portsmouth, and ordered to proceed to the China station. Arriving at Canton just previous to the commencement of hostilities between the English and Chinese, he exerted himself in protecting the property of American citizens; and having been fired upon from the Canton barrier forts while in the discharge of this duty, he received permission from his commanding officer, Commodore Armstrong, to demand an apology for the indignity. This being refused, he attacked the forts, 4 in number, with the Portsmouth, supported by the Levant, breached the largest and strongest, and landing with a force of 280 sailors and marines, carried the work by storm. The remaining forts were successively carried, with a total loss of 40 to the attacking party. The works were massive granite structures, with walls 7 feet thick, mounting 176 guns and garrisoned by 5,000 men, of whom 400 were killed and wounded. This exploit, performed in the presence of the British and French fleets in the Canton river, greatly enhanced the reputation of the American navy abroad. At the commencement of the civil war in 1861 Commander Foote was executive officer at the Brooklyn navy yard. In July, 1861, he was commissioned a captain, and in the following

September was appointed to succeed Commander Rodgers as flag officer of the flotilla fitting out in the western waters to act against the enemy. He personally superintended the completion of this work during the next few months, and on Feb. 4, 1862, sailed from Cairo with a fleet of 7 gunboats, of which 4 were iron-clad, to attack Fort Henry on the Tennessee river. Without waiting for the arrival of the land force under Gen. Grant, which was to coöperate with him, he opened fire upon the fort at noon of the 6th, and after a warm action of two hours compelled its surrender. Returning to Cairo, he sailed soon after for the Cumberland river, and on the 14th attacked Fort Donelson. The action was sustained with great vigor on both sides for an hour and a quarter, when the fleet was obliged to haul off just as the enemy's water batteries had been silenced, in consequence of two of the gunboats becoming unmanageable by having their steering apparatus shot away. Flag Officer Foote was severely wounded in the ankle by a fragment of a 64-pound shot, and his ship, the St. Louis, was struck 61 times. Though suffering from his wound, which compelled him to move about on crutches, he proceeded down the Mississippi with his fleet, strengthened by the accession of a number of mortar boats, and commenced the siege of Island No. Ten. After the reduction of that place, he applied to the government for a leave of absence, and early in May turned over his command to Capt. C. H. Davis, and left for his home in New Haven. Upon being restored to health, he was appointed chief of the bureau of equipment and recruiting under the new organization of the navy, which office he still holds (Dec. 1862). In July, 1862, he was also appointed by the president one of the 9 rear admirals on the active list.

FORNEY, John H., a general in the service of the confederate states, born in Lincoln co., N. C., was graduated at West Point in 1852 and appointed brevet 2d lieutenant in the 7th infantry; became 2d lieutenant in the 10th infantry in March, 1855, and 1st lieutenant in Aug. 1855. He resigned his commission Jan. 28, 1861, and is now a brigadier-general in the confederate army.

FORNEY, John Wein, an American journalist, born at Lancaster, Penn., Sept. 30, 1817. In 1833 he became an apprentice in the printing office of the Lancaster "Journal," and in 1837 editor and joint proprietor of the Lancaster "Intelligencer;" and in 1840 he united that paper with the "Journal." Becoming known as an able advocate of the principles and measures of the democratic party, he removed in 1845 to Philadelphia, where he was long the editor of the "Pennsylvanian," one of the boldest and most decided of the journals engaged in promoting the democratic cause. In 1851 he was chosen clerk of the U. S. house of representatives, and was reëlected in 1853. In the discharge of his official duty he presided at the beginning of the 35th congress over the prolonged contest which resulted in the election as speaker of the Hon. N. P. Banks, and gained great credit from the impartial manner in which he performed his part on that memorable occasion. Meanwhile he had ceased his connection with the "Pennsylvanian," and had become editor of the "Union," the democratic organ at Washington. This post he resigned in 1856, that he might devote himself to securing the election of Mr. Buchanan in the presidential canvass of that year. He now returned to Pennsylvania, and was chosen chairman of the democratic state committee; and in Jan. 1857, he was brought forward in the legislature of Pennsylvania as the democratic candidate for the office of U. S. senator, but was defeated by Mr. Cameron, and on Aug. 1 following began in Philadelphia the publication of "The Press," an independent democratic journal. The breach between the northern and southern wings of the democratic party having now become evident, Mr. Forney threw himself with ardor into the contest, espousing the opinions of which Mr. Douglas was the chief representative. When the Lecompton constitution of Kansas became a topic of public debate, he adopted an attitude of determined opposition to the administration of Mr. Buchanan, and was anew chosen clerk of the house of representatives in the 36th congress. His antagonism to the schemes of southern politicians and to the institution of slavery, which he judged to be the chief instrument of these schemes, now assumed an uncompromising character; and during the existing civil war he has used all his influence in support of the federal government, and in opposition to every method of ending the war which he has regarded as compromising the honor and the future peace of the nation. Since 1861 he has published, in addition to "The Press" at Philadelphia, a weekly paper in the city of Washington entitled "The Chronicle;" this also began to appear daily in Oct. 1862.

FORT CRAIG, a military work in New Mexico, situated on the W. bank of the Rio Grande, 10 m. N. from Valverde, 140 m. N. from El Paso, and 120 m. S. W. from Santa Fé. Previous to Feb. 19, 1862, skirmishing between the national and Texan forces in the vicinity of this fort had resulted in what was supposed to be a retreat of the latter; on the 20th, however, they were seen approaching the fort, on the E. side of the river. At this time Col. Canby was in command at Fort Craig, with about 5 regiments of infantry, a detachment of cavalry, and two batteries; the Texans, under Col. Steele, numbered about 2,000, being a part of Gen. Sibley's brigade. On the morning of the 21st Col. Canby ordered his force to advance up the W. bank of the river to prevent the Texans from reaching the water at the only point where the shore was favorable for crossing. This position was about 7 m. N. of the fort, near the village of Valverde, before mentioned. The point of destination being reached, the Texans were formed on the opposite bank, having arrived first; the Union batteries were opened upon them, and they retreated with a loss of 25 or 30 killed; then the Union force crossed to the E. bank, and continued the fight. From this time till 1 o'clock P. M. the battle was fought chiefly by artillery, Col. Roberts being in command of the United States troops; Col. Canby then came upon the field with a regiment of volunteers, and took command in person. Capt. McRae was stationed with a battery at the extreme left of the Union line; near him was a thick forest, within the shelter of which large bodies of the Texans had been for some time collecting. Col. Canby determined to dislodge them from this position, and for that purpose ordered McRae's battery to advance upon the woods, supported by two companies of regulars and two companies of volunteers. Seeing this movement, the Texans began a series of infantry charges upon the battery of the most desperate character. The battle then became a savage contest between Capt. McRae and the main body of the enemy; charge after charge was made and repelled, till every man at the guns save one or two was slain, McRae falling among the last. The infantry which should have supported the battery precipitately retreated. With the fall of the battery the fate of the day was decided against the Union forces, who retired to Fort Craig, having lost 60 killed and 140 wounded. The loss on the other side was variously estimated at 100 to 500 killed and wounded.—After their success at Fort Craig, the Texans went toward the north-east and captured Santa Fé; soon afterward they attempted to take Fort Union, in San Miguel co., but were defeated; they then evacuated Santa Fé, leaving their sick and wounded, retreated southward toward El Paso, passing Fort Craig in their way, and were engaged in various small skirmishes. When near Fort Fillmore, 30 m. N. from El Paso, Gen. Sibley, Col. Steele, and Col. Green having united their forces, they found themselves between Gen. Canby's force from Fort Craig and about 5,000 new troops from California. Sibley's force numbered about 3,500 men, well armed and all mounted, having with them abundant artillery, including 9 mountain howitzers. A battle ensued, resulting in the defeat and rout of the Texans, who lost their stores, horses and mules, arms, and ammunition; a great number of them were killed and wounded, and nearly one half their force taken prisoners. Gen. Sibley, with Cols. Steele and Green and 150 men of Green's regiment, escaped; but before they reached El Paso Sibley and Steele are reported to have been assassinated by the Texan soldiers, enraged at their defeat. The Union forces immediately after the fight took possession of El Paso and Fort Bliss, which is near by, and sent a detachment to Camp Quitman, Texas, 80 m. E. from El Paso. Thereupon the Texans evacuated Fort Davis, 200 m. E. from El Paso, and all the other forts in the extreme north-west of their state, Fort Clark, 120 m. from San Antonio, being the nearest one to El Paso held by them.

FORT DONELSON, a military work erected by the confederates in 1861, situated in Tennessee on the W. bank of the Cumberland river, about 9 m. S. from the Kentucky and Tennessee state line, and a mile below the town of Dover. The Cumberland river at the point described makes a short bend toward the west. At the water's edge two formidable batteries were placed, commanding the river for some distance N. Behind these batteries the bank rises somewhat abruptly to a height of 100 feet; upon the top of this elevation is Fort Donelson, an irregular work, enclosing about 100 acres. The country W. of it is rocky, heavily wooded, and broken into ridges. Directly W. of the fort are extensive abatis, a semicircle of batteries, and a trench for riflemen running completely round the works, and including the town of Dover. Gen. Pillow was in command of the fort till Feb. 13, when Gen. Floyd arrived and superseded him; the third in rank was Gen. Buckner. Gen. Grant, then in command at Fort Henry, on the Tennessee river, having determined to attack Fort Donelson from two directions, made the following arrangements: a small portion of the force in Fort Henry was to proceed down the Tennessee, turning back all reënforcements with orders to wait at Paducah for the arrival of gunboats and transports from Cairo, and then to proceed with these up the Cumberland river to Fort Donelson; at the same time, a land force, under Gen. Grant in person, was to go from Fort Henry across to the same point; there the two bodies and the gunboats were to coöperate. The force which went by the river numbered about 10,000; that by land was about 15,000 strong. Of the gunboats, under Flag Officer Foote, four, the Louisville, St. Louis, Carondelet, and Mound City, were iron-clad; and two, the Lexington and Conestoga, were wooden. The column which went by the river was expected to be in the vicinity of Fort Donelson on the night of Wednesday, Feb. 12, ready to begin the attack on Thursday morning, in conjunction with the force from Fort Henry; the latter reached the point of destination on Wednesday afternoon, but the former did not arrive till the night of Thursday. The land division, on Wednesday afternoon, drove in the pickets, and commenced the investment of the fort. On Thursday, the force from below not coming up, those already on the ground spent the day in extending their lines, and in sharp skirmishing with the confederates, which resulted in the loss to the national side of 30 killed and 170 wounded. During the day also, the Carondelet singly engaged the confederate batteries, firing 102 shots, and receiving a severe fire in return; she was finally compelled to retire, a heavy shot having entered one of her forward ports, disabling her and wounding 8 men. The troops from down the river arrived at midnight, and commenced the great labor of disembarkation; this was finished by noon of Friday, the 14th, though the troops did not before night effect a complete junction with those of Gen. Grant. During the day of Friday continual and severe skirmishing went on, though not with as much loss as on Thursday; the day was piercingly cold, and the men suffered extremely from exposure without sufficient or suitable food. At about 3 o'clock in the afternoon the gunboat fleet went alone into action with the fort. An hour and a quarter of severe fighting ensued, at very short range; at the end of that time the fire of the fort had become feeble, and the boats were preparing to give the final blow to the battle, when two shots from the fort disabled the steering apparatus of the flag ship St. Louis and of the Louisville; they at once drifted helplessly away. The confederates directly saw their advantage, returned to the river battery, from which they had been driven by the severity of the national fire, and poured upon the fleet the whole weight of their metal, compelling the boats to withdraw. During this action the flag ship received 59 shots, and each of the others about half as many; the Union loss in killed and wounded was 54. Nothing of note occurred during the night. The morning of Saturday, the 15th, was still bitterly cold, and the national troops were stiff and sore. Soon after dawn, without a moment's warning, the confederates hurled forth a force of 3,000 men upon the extreme right of the opposing army, where Gen. McClernand was in command; accompanying this large body of infantry were 12 pieces of artillery. Two Illinois regiments sustained the shock of this attack bravely for a time, but were overcome; then, reënforced by as many more, they made a fresh stand, and checked the hostile advance; at once 3 more Illinois regiments, 2 of Ohio, 1 of Kentucky, and a battery were added to these. From the time of commencing till nearly noon, the fight raged most fiercely upon the Union right; regiment after regiment, wanting ammunition, was forced to give way, and their places were supplied by others. At noon the confederates, who had thus far been steadily gaining ground, were driven back to their intrenchments by a combined fire of artillery and musketry from 2 batteries and 3 regiments. A lull then ensued. Gen. Grant had by that time learned from Flag Officer Foote that the gunboats could not be put in a condition to render effective assistance for several days; but the critical situation of affairs upon the field made it necessary that a decisive step should be taken at once. Accordingly, a general attack from the Union lines was ordered, the left, under Gen. C. F. Smith, taking the lead. At 3 o'clock he moved forward, having at his command 10 regiments. The hills in front of his position were some of the most abrupt of all upon which the confederates were posted. Gen. Smith detailed the 2d and 7th Iowa and the 52d Indiana regiments for the work of storming these heights, while he sent the remainder of his division toward the right for the purpose of diverting attention from the main point of attack; he then in person headed the storming party, and advanced up the hill. The confederates' fire was very severe, but the column steadily went on, and gained the works, though with a heavy loss; then delivering their own fire for the first time, they drove the enemy from their position, and with the aid of reënforcements at once secured the ground. Meanwhile, on the right, an extemporized division, at the head of which was Gen. Lewis Wallace, was enthusiastically advancing; the news of the success on the left added to their spirit, and though the fighting was most severe, the national force gained a continual advantage, till at dusk they had recovered all the ground they had lost in the early part of the day, and had driven the enemy back within their fortifications. The men clamored for an assault the same night, but it was thought prudent to postpone it till the next morning. On Sunday morning, however, before any movement could be made, the fort was surrendered. It appeared that on Saturday night, at a consultation of the confederate generals, Gen. Floyd had determined to withdraw with his brigade. He accordingly turned over the command of the fort to Gen. Pillow, who passed it to Gen. Buckner, and retired with Floyd up the Cumberland river, taking away about 2,000 men (not 5,000 as at first reported). With the fort 16,000 prisoners were surrendered by Gen. Buckner. Forty pieces of cannon, many thousand small arms, and extensive magazines of ordnance, quartermasters' and commissary stores, were also captured. The Union loss was about 250 killed, 1,000 wounded, and 150 missing; that of the confederates, according to their own report, was very nearly equal; they make no allowance, however, for the missing, which included many dead, buried by the national troops. This victory, following closely upon the capture of Fort Henry, was of signal importance to the national cause, as by it the confederates' line of fortifications was broken, and their means of communication between east and west destroyed.

FORT HENRY, a military work situated on the E. bank of the Tennessee river, near the state line of Kentucky and Tennessee. It was an important confederate post, for the reason that it served to defend the railroad communication between Memphis and Bowling Green, a line of transportation much used. On Feb. 3, 1862, a large force of federal troops under Gen. McClernand embarked at Cairo, went up the Ohio to Paducah, and thence up the Tennessee river toward the fort, reaching the point where they were to land on the evening of the 5th. Meanwhile a fleet of gunboats, under Flag Officer Foote, had gone up the river, the design being to make a simultaneous attack by land and water. The fleet included the Essex, Carondelet, Cincinnati, St. Louis, Conestoga, Tyler, and Lexington. The plan of attack was as follows: one division of troops was to land on the E. bank of the river, to prevent the fort from receiving reënforcements; the second division was to land on the W. bank, and occupy certain heights overlooking the fort; the third division was to hold itself in readiness on the E. side to aid in the attack, when the gunboats should commence shelling the fort. This plan was materially changed on account of the muddy roads, which retarded the advance of the troops. Thinking it best not to wait for the coming up of the land forces, Flag Officer Foote began the attack about midday on the 6th. The rapid and accurate fire of the boats was replied to by the fort with spirit, many of the shots from the latter striking the vessels, by whose armor they were however in most cases successfully resisted. After the fight had continued for about half an hour, a shot from the fort struck the boiler of the Essex, Commander Porter, causing an escape of steam, by which 29 officers and men were scalded, 5 of them, including the 2 pilots, being fatally injured. One man in the same boat was killed by a cannon shot. The Cincinnati had one man killed and 9 wounded during the engagement. These were all the casualties on the Union side. After a bombardment of an hour and a quarter the fort was unconditionally surrendered by the officer in command, Gen. Lloyd Tilghman. Immediate possession was taken of the work, the capture including Gen. Tilghman and staff, 60 or 70 men, the fort and effects, 20 guns, and barracks and tents for 15,000 men. It was discovered that, on the night before the bombardment, the fort had been reënforced by 1,000 cavalry, and that on the morning of the 6th the entire garrison, thus reënforced, had fled. The loss of life on the side of the confederates was thought not to be large, only 4 dead bodies being found within the work.

FORT JACKSON. See New Orleans, Occupation of.

FORT MACON, a military work situated on Bogue island, at the entrance to and commanding the harbor of Beaufort, N. C. After the battle of Newbern, Gen. Burnside's forces took peaceable possession of Beaufort, and on March 23, 1862, demanded the surrender of Fort Macon, then held by 5 companies of confederate troops, and commanded by Col. M. J. White. The demand being refused, preparations were immediately made for the reduction of the fort, which was effected April 25. The Union batteries with which the bombardment was carried on were 3 in number, mounting 11 pieces; one was of 3 30-pounder Parrott guns, one of 4 10-inch, and one of 4 8-inch mortars. These were placed on Bogue island, also called the Spit; the 10-inch mortars were 1,650 yards, the Parrott guns 1,450 yards, and the 8-inch mortars 1,250 yards from the fort. Eighteen guns on the fort pointed up the Spit toward the Union batteries. The bombardment, which was conducted under the immediate command of Gen. Parke, began at 5½ A. M. on April 25, and ended at 4 P. M. of the same day, 1,100 shots having been fired from the three U. S. batteries. During the forenoon the Union naval squadron, including three steamers and a bark, attempted to assist in the bombardment; but the sea was rolling too heavily to admit of much accuracy of aim. At 4 P. M. a truce till the next morning was agreed upon, and at 10 A. M. on the 26th the terms of capitulation were signed. The Union loss was 1 killed and 2 wounded; that of the confederates was 8 killed and 20 wounded.

FORT PICKENS, a military work on Santa Rosa island, near Pensacola, Fla. For several months after the reënforcement of this place in April, 1861 (see Pensacola, vol. xiii.), nothing occurred to alter the relations of the opposing forces. The confederate army under Gen. Bragg increased gradually in numbers and discipline, and the garrison was relieved from any apprehension of a surprise by the arrival of the steam frigate Colorado and other ships of war, and of the 6th regiment of New York volunteers (Wilson's zouaves), which was encamped on Santa Rosa island, about 2 m. distant from the fort. Col. Brown further strengthened his position by erecting sand batteries in the vicinity of the fort, and the confederates lined the shore of the mainland with rifle pits and batteries. On the night of Sept. 13 an expedition, planned by Capt. Bailey of the Colorado, and commanded by Lieut. John H. Russell, cut out the privateer Judah from under the guns of the forts at the navy yard, destroyed her by fire, and having spiked a gun in battery at the yard, returned in safety to the ship, with a loss of 3 killed and 15 wounded. At 2 A. M. of Oct. 9 a body of between 1,200 and 1,500 confederates, commanded by Gen. Anderson, landed on the island, about 4 m. from the fort, and surprised the camp of Col. Wilson. The zouaves were driven out in some confusion, and a portion of their camp was plundered and burned. A body of regulars from the fort under Major Vogdes was sent to their assistance, and a few of the zouaves having been rallied, the enemy were driven toward their boats, their retreat being accelerated by the arrival of a fresh detachment of regulars under Major Arnold. A heavy fire at short range was also poured into them after they had embarked, which must have proved exceedingly destructive. The object of the expedition was to spike the guns of two batteries near the fort, and in the confusion of the moment to enter the fort itself pell mell with the fugitives; but, according to Col. Brown, the confederates never advanced within half a mile of the batteries. The Union loss in killed, wounded, and missing was 68, including Major Vogdes taken prisoner; that of the confederates, by their own account, was 81, although Col. Brown estimates it much larger. On the morning of Nov. 22 Col. Brown opened fire from Fort Pickens and the adjacent batteries upon the confederate works, which replied with vigor. The war steamers Niagara and Richmond also opened upon Fort McRae, and the contest was kept up during the day with advantage to the Union arms, Fort McRae and the batteries at the navy yard being effectually silenced. Fire was reopened on the next morning by Brown, and continued with such effect that Forts McRae and Barrancas and several batteries were permanently silenced, and the navy yard and the adjoining village of Warrington laid in ashes. The contest ceased on both sides shortly after midnight, and was not again resumed. Fort Pickens was uninjured by the enemy's fire, with the exception of one gun disabled, and the garrison lost only 6 in killed and wounded. The confederate loss, according to Gen. Bragg, was 7 killed and 8 wounded. On May 11, 1862, Pensacola was evacuated by the confederates, who destroyed Fort McRae, the hospital, and the navy yard. On the 12th Gen. Arnold occupied the town with a body of Union troops.

FORT PULASKI. See Tybee, vol. xv.

FORT ST. PHILIP. See New Orleans, Occupation of.

FORT WRIGHT (called also, in some official reports, Fort Pillow), a military work erected by the confederates on the Tennessee shore of the Mississippi river, at the first Chickasaw bluffs, about 70 m. above Memphis. After the evacuation of Island No. Ten, Fort Wright was the only strong point of importance above Memphis. It was daily watched and occasionally fired upon by the Union fleet of gunboats and mortar boats, under the command of Capt. Davis, Flag Officer Foote being disabled by a wound; but no serious attack was made. On the morning of May 10 the confederate ram Louisiana appeared from below, accompanied by 4 gunboats. The Louisiana at once engaged the gunboat Cincinnati, which responded with a full broadside, and succeeded in keeping in check for 20 minutes her 5 assailants, all of whom were throwing heavy shot in rapid succession. Her sloping iron sides repelling the severest assault of ordnance, the Louisiana prepared for an attempt to run her down. At this juncture the Cincinnati was reënforced by 5 other iron-clad boats of the Union fleet, the Benton (flag ship), Carondelet, Mound City, Cairo, and St. Louis; this arrival gave the Cincinnati leisure to devote herself exclusively to the impending attack of the Louisiana, and her commander, Capt. Stembel, put his steam batteries in readiness for action, and waited for the assault. The Louisiana came at him under great speed; just as she was about to strike his vessel, the captain adroitly turned the head of the Cincinnati and avoided the blow, at the same moment shooting the pilot of the confederate ram dead; the latter vessel withdrew for a second onset, but was received with a discharge of steam and scalding water from the Cincinnati, which compelled her to withdraw from the fight. As she retired, a confederate reënforcement of 3 vessels appeared, among them the gunboat Mallory, of which great expectations were entertained. The latter took up the attack upon the Cincinnati, attempting to run her down; this was repeatedly prevented by the rapid handling of the Union boat, and the Mallory drew up alongside and opened fire; but the answering discharge was too severe for her, and she once more prepared to strike her antagonist with the hope of running her down; she was however met by the St. Louis, which struck her fairly amidships, and cut her nearly in two; the Mallory sank at once, and many of her crew were picked up by the St. Louis and Cincinnati, though the larger portion of them were drowned. While this work was in progress, the other boats of the Union fleet had engaged the rest of the confederate vessels, and a fierce cannonading was kept up on all sides; in the midst of this, two of the enemy's boats exploded with heavy reports, shells from the national guns having reached their magazines. Three of the 8 confederate vessels being thus destroyed, and the remaining 5 being crippled by the fire to which they had been exposed, the latter withdrew to the shelter of the fort, the battle terminating soon after 7 o'clock in the morning, one hour and 20 minutes from the time of its commencement. The loss of life upon the side of the confederates is not known. The casualties in the Union fleet were comparatively unimportant, the only persons injured being Capt. Stembel of the Cincinnati and two seamen, all slightly wounded; the vessels received such trifling damage that they were again ready for action within a few hours. No considerable engagement followed, but on June 3 and 4 the confederates abandoned the fort and retired to Memphis, whither the fleet followed them. (See Memphis, in this supplement.)

FORTRESS MONROE, the largest military work and only perfect fortress in the United States, situated at the extremity of Old Point Comfort, a narrow strip of land jutting out from the S. E. end of the peninsula between the York and James rivers, Va., just within the entrance of Chesapeake bay, 20 m. W. S. W. from Cape Charles, and 10 m. N. N. W. from Norfolk. It commands the estuary of the James (called Hampton roads) and the approach by sea to the town of Norfolk and the Gosport navy yard, which are both situated on the Elizabeth river, near its mouth on the S. bank of the James. The only continuous approach to the fortress by land is over a sandy beach not more than 40 rods wide, which might be easily cut through in case of emergency; this is commanded by a formidable bastion. The fortress is about a mile in circuit, its outer works enclosing an area of more than 60 acres. It is a bastioned work, of irregular heptagonal plan, with walls 35 feet high, built principally of granite, and a granite-faced moat about 150 feet wide in which there is from 8 to 15 feet of water, according to the state of the tide. The walls are strengthened by an embankment of sand and clay of such thickness that it could hardly be breached. The casemates are bomb-proof. The land side is further defended by an outwork, and the seaward front by a substantial water battery of stone, pierced for 42 guns. The whole armament of the fortress is 371 guns, consisting of mortars, columbiads, and smaller ordnance. In the interior of the work there is a parade ground of 25 acres shaded by live oak trees. The fortress is intended to cross fire with Fort Wool (formerly called Fort Calhoun), built on an artificial foundation on the Rip Rap shoal in the roads, about 1¼ m. S. of Old Point Comfort; the main ship channel lies between these two forts. Fortress Monroe was begun in 1817, and cost about $2,500,000. Fort Calhoun was begun in 1818, and is still unfinished; its cost is estimated at nearly the same amount; it is to mount 224 guns. In time of war Fortress Monroe is intended for a garrison of 2,450 men, and Fort Wool for 1,120. When the civil war commenced the former was held only by a small body of artillerists under command of Col. Dimick, but the work itself was so strong that no attempt was made to seize it by the confederates, and the garrison was soon reenforced by volunteers. In May, 1861, Gen. B. F. Butler took command at Fortress Monroe, and that place has ever since been an important naval rendezvous and depot of troops. A fortified camp was established at Newport News, about 7 m. S. S. W. from the fortress, while the confederates erected batteries on the S. side of the roads, at Pig point, 4 m. S. of Newport News, and Sewall's point, 5 m. E. S. E. of Newport News and 3¼ m. S. S. E. of the fortress. On Aug. 20 Gen. Butler was relieved of the command and succeeded by Gen. Wool, who retained it until June 2, 1862, when he was ordered to Baltimore, and the fortress has since been the head-quarters of Gen. Dix, commanding the 7th army corps.

FOSTER, John G., major-general of volunteers in the U. S. army, born in New Hampshire in 1824, was graduated at West Point in 1846 and appointed a brevet 2d lieutenant in the corps of engineers; was brevetted as 1st lieutenant for gallantry at Contreras and Churubusco, Aug. 20, and as captain for gallantry at Molino del Rey, Sept. 8, 1847, where he was one of the party which stormed the Mexican works and was severely wounded; was assistant professor of engineering at West Point in 1854; became a captain July 1, 1860, and was brevetted as major Dec. 26, 1860. On April 28, 1858, he took charge of the fortifications in North and South Carolina, in which post he was on the breaking out of the civil war in 1861. He thus became one of the garrison of Fort Sumter under Major Anderson, and participated in the defence of that fort. After its surrender he was employed upon the fortifications of New York. Appointed a brigadier-general of volunteers, Oct. 23, 1861, he commanded a brigade in the expedition to North Carolina under Gen. Burnside, and took a leading part in the capture of Roanoke island, Feb. 8, 1862, and in that of Newbern, March 14, of which place he was made governor. In August he was promoted to be a major-general of volunteers, to date from April 26; and when in July Gen. Burnside left North Carolina to join the army of the Potomac, Gen. Foster became the commander of the department, and still (Dec. 1862) remains in that post.

FRANKLIN, William Buell, major-general of volunteers in the U. S. service, and brevet brigadier-general in the regular army, born in York, Penn., Feb. 27, 1823. He entered the military academy at West Point in 1839, was graduated first in his class in 1843, and being appointed brevet 2d lieutenant in the corps of topographical engineers, was stationed on the survey of the northern lakes. In the summer of 1845 he accompanied an expedition to the South pass of the Rocky mountains under command of Brig. Gen. Kearny, and in the following year was engaged in the survey of Ossabaw sound, Ga. Reporting to Gen. Wool at San Antonio, Texas, in Aug. 1846, he accompanied him to Saltillo, Mexico; served on the staff of Gen. Taylor at the battle of Buena Vista; was brevetted 1st lieutenant for gallant and meritorious services in that engagement; and in June, 1848, was ordered to West Point as assistant professor of natural and experimental philosophy, in which capacity he served until Jan. 1852. In the following month he was appointed professor of natural and experimental philosophy and civil engineering at the New York city free academy. During the same year he made a survey of Nag's Head and Roanoke island, N. C., and in November was appointed engineer in charge of the harbor at Oswego, N. Y. He next held the office of lighthouse engineer and inspector on the coasts of Maine and New Hampshire, and superintendent of the erection of the custom house and marine hospital at Portland, Me. The articles Fresnel and Lighthouse in this cyclopædia are from his pen. He was promoted to be captain, July 1, 1857. In April, 1858, he was one of a board of engineers appointed to examine the mouth of Cape Fear river, N. C.; in March, 1859, superintendent of the capitol and post office extensions at Washington; in the following month one of a board to report upon the Rock Island bridge with reference to its obstruction of the Mississippi; and in March, 1861, superintendent of the extension of the national treasury buildings. On the outbreak of the civil war he was appointed, May 14, colonel of the 12th (new) regiment of infantry, and ordered to New York to superintend the transportation of volunteer regiments to the seat of war. On the 17th of the same month he received the commission of brigadier-general of volunteers, and in July was assigned a brigade in Heintzelman's division of the army of N. E. Virginia. At the battle of Bull run he was "in the hottest of the fight," according to the official report of Gen. McDowell, and was assigned the duty of covering the retreat. Upon the reorganization of the army in September, he was appointed to the command of a division in the army of the Potomac. Sent to reënforce Gen. McClellan after the evacuation of Yorktown, he transported his division by water to West Point on York river, and repulsed the enemy under Gens. Whiting and G. W. Smith, who attempted to prevent his landing, May 7, 1862. On the 15th he was appointed to the command of the 6th provisional army corps. He took part in the chief operations in front of Richmond, and during the movement to the James river, which began June 27, was charged with covering the retreat, repulsing the enemy on the right bank of the Chickahominy, June 27 and 28, and again in conjunction with the corps of Gen. Sumner at Savage's Station, June 29. He commanded at the battle of White Oak swamp bridge on the 30th, and the next day joined the main body of the army on the banks of the James river. He was promoted to the rank of major-general of volunteers July 4, and brevet brigadier-general in the regular army, June 30, 1862. In the battle of South mountain, Sept. 14, he distinguished himself by storming Crampton's gap, which was held by the enemy in force, and obstinately defended. He was in the battle of Antietam, Sept. 17, and in November was placed in command of the left grand division of the army of the Potomac.

FREDERICTOWN, a village and the capital of Madison co., Mo., 158 m. S. E. of Jefferson City, which was the scene of a battle on Oct. 21, 1861, between the U. S. forces under command of Col. J. B. Plummer, and the confederate troops under Jefferson Thompson. The former, 1,500 in number, left Cape Girardeau, Mo., on the 18th, and marched by way of Jackson and Dallas to Frederictown, reaching that place on the 21st. There Col. Plummer found a Union force of 3,000 from Pilot Knob, and added a portion of them to his command, which, thus reënforced, numbered 2,500. Learning that Thompson had retired in the direction of Greenville, he at once followed in pursuit, overtaking him within half a mile of the town, the confederates numbering about 4,000, with 4 pieces of artillery. The attack was commenced by an advance from two regiments, whose fire compelled the enemy to fall back, and soon to retreat in confusion. They rallied, however, about half a mile in the rear of their first position, and brought one gun into battery in the middle of the road, supported by infantry on either side. A Union cavalry charge broke the line, and caused the confederates again and finally to retreat. A pursuit was commenced the next morning, but without avail. The Union loss in this affair was 6 killed and 60 wounded; the confederates lost nearly 200 killed, a large number of wounded, and 80 prisoners.

FRENCH, Samuel G., a general in the service of the confederate states, born in New Jersey, was graduated at West Point in 1843, and appointed brevet 2d lieutenant in the 3d artillery. He was distinguished in the battles of Palo Alto and Resaca de la Palma, and brevetted 1st lieutenant and captain for gallant conduct at Monterey and Buena Vista, in the latter of which engagements he was severely wounded. In 1847 he was promoted to be 1st lieutenant; in 1848 became assistant quartermaster, with the rank of captain; and in May, 1856, resigned his commission. When the civil war broke out he was appointed brigadier-general in the southern provisional army.

FRENCH, William Henry, brigadier-general of volunteers in the U. S. army, born in Maryland about 1818, was graduated at West Point in 1837, and was appointed a 2d lieutenant in the 1st artillery, an assistant commissary of subsistence in 1837, and a 1st lieutenant in July, 1838; was acting assistant adjutant-general to Maj. Gen. Patterson and aide-de-camp to Brig. Gen. Pierce in 1847; and was brevetted a captain for gallantry at Cerro Gordo, and a major for gallantry at Contreras and Churubusco. On Sept. 16, 1861, being in command at Key West, he issued an order requiring all citizens to take the oath of allegiance to the United States, under penalty of being removed from the island. On Sept. 28 he was appointed a brigadier-general of volunteers, and on Oct. 26 a major in the 2d artillery. In the battle of Antietam he commanded a division of Gen. Sumner's army corps.

FRONT ROYAL, a village and the capital of Warren co., Va., 1 m. E. of the Shenandoah river, at the W. entrance to Manassas gap, on the Manassas gap railroad from Alexandria to Strasburg; pop. about 500. It was the scene of combats between the Union and confederate forces on May 23 and 30, 1862, the former affair being the more serious. The division of Gen. Banks, weakened by the withdrawal of troops to strengthen McDowell, was at Strasburg on May 23; and Col. Kenly, with the 1st Maryland volunteers, 2 companies from the 29th Pennsylania volunteers, 2 from the 5th New York cavalry, and a section of Knapp's battery, was at Front Royal, to which place he had been sent with orders to hold the town, it being supposed that he would be attacked, if at all, by only a guerilla force. On the 23d, however, the confederate army of Jackson, in great force, swept down the Shenandoah valley, and fell upon the 800 men of Col. Kenly's command. They received the first attack on the E. side of the river, and when overpowered effected a retreat in good order to the other side, unsuccessfully attempting to burn the bridges over the stream. On the W. side of the river a second attack was made, in which the Union force was entirely broken in pieces; the fighting was mostly done on the confederate side by the cavalry. The losses in the action are not known, but were comparatively heavy on both sides. Col. Kenly was severely wounded during the second attack, and taken prisoner, but soon released on parole.—On May 30, Front Royal being then occupied by a Georgia regiment, one from Louisiana, and a detachment of cavalry, Major Nelson, with 4 companies of Rhode Island cavalry, made a sudden descent upon the town, being supported by a brigade of infantry; he drove the confederates out at once, saving from destruction both bridges. The Union loss was 8 killed and 5 wounded. The confederate loss in killed and wounded is not known, but 6 officers and 150 privates were captured.

FRONTENAC, Louis de Buade, comte de, French governor of Canada, born in 1620, died in Quebec, Nov. 28, 1698. He entered the army at an early age, holding a commission at 17, and learned the science of war under Maurice of Nassau. After serving in Italy, Flanders, and Germany, he was selected by Turenne to lead the troops sent to relieve Candia, in the defence of which he participated. He came to Canada as governor in 1672. Soon after his arrival he built Fort Frontenac on Lake Ontario; and as Marquette had just explored the Mississippi, Frontenac encouraged and aided La Salle in his plans for colonizing the valley of that great river, and by posts at Niagara, Mackinaw, and in Illinois encircled the English settlements, and controlled the Indians of the whole interior. Being a man of strong prejudices, fond of pomp, and arbitrary, he became involved in disputes with the clergy and with colonial officers, which led to his recall in 1682, after some strange scenes. His successors were inefficient, and a few years later, when the colony was on the brink of ruin and Lachine had been destroyed by the Iroquois and English, the king sent Frontenac back. He arrived in 1689 to find the colony menaced by the whole power of the English settlements. He acted promptly and vigorously. The massacre of Lachine was retaliated along the whole English border, and this exhibition of strength enabled him to gain once more the western tribes and save the French power. He formed a plan for conquering New York, but it miscarried, and he in turn saw Montreal threatened from the south, and Quebec invested by a fleet and army under Phipps (1690). His vigorous measures compelled Phipps, utterly defeated by land and water, to raise the siege and retire. Frontenac, relieving Montreal, followed up his success by invading the Mohawk country, and leading an expedition in person against Onondaga and Oneida, while on the coast he menaced Maine and New York. The treaty of Ryswick (1697) found Canada, thanks to Frontenac, strong in the favor of the Indians, and a source of uneasiness to the English. His wife, who survived him, had been one of the most esteemed of the beauties of the court, and a close friend of Mme. de Maintenon, a relative of her husband. They left no posterity, their only son having been killed at the head of a regiment which he commanded in the service of the prince bishop of Münster.

FRY, Speed S., brigadier-general of volunteers in the U. S. army, entered the service in 1861, became colonel of the 4th Kentucky volunteers, and was promoted to be brigadier-general March 21, 1862. He is now serving in the army under Gen. Rosecrans.

G

GAINES'S HILL. See Chickahominy.

GAINESVILLE. See Bull Run.

GARDNER, William Montgomery, a general in the service of the confederate states, born in Georgia, was graduated at West Point in 1846, and appointed brevet 2d lieutenant in the 1st infantry; transferred to the 7th and then to the 2d infantry in 1847; and brevetted 1st lieutenant for gallantry at Contreras and Churubusco. He was wounded in both these engagements, in the latter severely. In 1849 he was promoted to be 1st lieutenant; in 1852 appointed aide-de-camp to Brig. Gen. Hitchcock; and in 1855 made captain. He resigned his commission in Jan. 1861, and was appointed a brigadier-general in the southern army.

GARFIELD, James Abram, brigadier-general of volunteers in the U. S. army, born in Orange, Cuyahoga co., O., Nov. 19, 1831. He was at first a day laborer, and afterward a driver and then boatman on the Pennsylvania and Ohio canal. In 1849 he attended an academy, and taught a district school the following winter. In 1854 he entered the junior class of Williams college, Mass., where he was graduated in 1856. Immediately afterward he was appointed teacher of ancient languages in the eclectic institute at Hiram, O. The next year he became president of that institution, which office he held until the civil war broke out. In 1859 he was elected to the senate of Ohio, and in 1860 was admitted to the bar. In the autumn of 1861 he took the field as colonel of the 42d Ohio volunteers, and was sent to eastern Kentucky, where with his own regiment and the 40th Ohio he defeated Humphrey Marshall. He was commissioned brigadier-general of volunteers, Jan. 11, 1862. In Oct. 1862, he was elected to congress from the 19th district of Ohio.

GARLAND, Robert R., a general in the service of the confederate states, killed at the battle of South mountain, Md., Sept. 14, 1862. He was appointed from Missouri a 2d lieutenant in the 7th infantry, Dec. 30, 1847, became a 1st lieutenant in March, 1855, regimental quartermaster in 1858, and a captain in 1860. He was dropped from the rolls of the U. S. army, May 23, 1861, for having given evidence of disloyalty. He was soon appointed a brigadier-general in the confederate service, which position he held at the time of his death.

GARNETT, Robert Selden, a general in the service of Virginia, born at Elmwood, Essex co., Va., about 1822, killed in the battle of

Carrick's ford, July 14, 1861. He was graduated at West Point in 1841, and appointed a brevet 2d lieutenant in the 4th artillery; was assistant instructor in infantry tactics at West Point from July, 1843, till Oct. 1844; was aide-de-camp to Gen. Wool until Sept. 1845; distinguished himself in the battles of Palo Alto and Resaca de la Palma; became a 1st lieutenant in Aug. 1846; was aide-de-camp to Gen. Taylor from June, 1846, to Jan. 1849; was brevetted a captain for gallantry at Monterey, and a major for gallantry at Buena Vista; was transferred to the 7th infantry in Aug. 1848; became a captain in March, 1851; was commandant of cadets and instructor in infantry tactics at West Point from Nov. 1852, to July 1854; became captain in the 1st cavalry March 3, and major of the 4th infantry March 27, 1855; served on the Pacific coast and distinguished himself in operations against the Indians in Washington territory in 1856–'7–'8; obtained leave of absence to travel in Europe on account of ill health in 1860, but returned on the outbreak of the civil war, and resigned his commission April 30, 1861. He was appointed adjutant-general of the army of Virginia and commander of the confederate forces in the western part of that state, and his troops having been defeated at Rich mountain, and a part of them under Col. Pegram compelled to surrender, he was attempting to escape with the remainder when his forces were routed and he was killed at Carrick's ford.

GATLIN, Richard Caswell, a general in the service of the confederate states, born in North Carolina about 1813, was graduated at West Point in 1832 and appointed brevet 2d lieutenant in the 7th infantry; became 2d lieutenant May 31, 1834, and 1st lieutenant Aug. 31, 1836; was regimental adjutant from 1838 to 1845; became captain Sept. 30, 1845; was brevetted major for gallantry at Monterey, Sept. 23, 1846, where he was wounded; was appointed in 1847 colonel of the 1st North Carolina volunteers for the Mexican war, but declined; became major of the 5th infantry in 1860; was taken prisoner April 23, 1861, by a body of Arkansas troops under Lieut. Col. Borland, who captured Fort Smith and its garrison, but was at once released on parole, and resigned his commission May 20, to enter the confederate army, in which he was made a brigadier-general.

GAULEY BRIDGE, a village of Fayette co., Va., near the junction of the Gauley with the New river, which here takes the name of the Great Kanawha. A combat took place here between the national and confederate forces, Nov. 10, 1861. The confederate army in western Virginia, under command of Gens. Floyd and Henningsen, were between Cotton hill, near Gauley Bridge, and Fayetteville, Gen. Floyd's camp being at the former place; their united forces numbered from 7,000 to 8,000 infantry, together with a large number of cavalry and artillery. On Nov. 10, the Union general Benham having previously made a movement with the design of finding his way to Floyd's rear, Gen. Cox ordered an attack upon the camp of the latter in front. Accordingly, Col. Villiers, with the 11th Ohio regiment, crossed the New river, drove in the confederate pickets, and planted the U. S. flag on the breastworks. In the evening the confederates made an attack on these Union outposts, and retired to their camp. In the morning of the 11th Col. Villiers prepared for a decisive assault, but the confederates retired and made their escape. The Union troops lost 8 killed and missing, and 11 wounded, most of them but slightly.

GAULT, a local name used in the S. E. part of England for a series of beds of clay and marl found between the upper and lower greensand. It is usually about 100 feet thick, and is characterized by peculiar forms of cephalopoda, such as the hamite, schaphite, &c. By these, the formation, small as it is, is recognized also in the Alps.

GEARY, John W., brigadier-general of volunteers in the U. S. army, born in Westmoreland co., Penn., about 1820. He began life as a school teacher, was then a merchant's clerk in Pittsburg, afterward studied at Jefferson college, Penn., and finally became a civil engineer, and was for several years connected with the Alleghany Portage railroad. He was lieutenant-colonel of Roberts's regiment of Pennsylvania volunteers in the Mexican war, and commanded his regiment at the battle of Chapultepec, where he was wounded, but resumed his command the same day at the attack on the Belen gate previous to the capture of the city of Mexico. For gallant and meritorious conduct on that occasion he was made first commander of the city of Mexico after its capture, and about the same time became colonel of his regiment. He removed to San Francisco after the war, and was appointed postmaster of that city in Jan. 1849. He was soon afterward elected first alcalde of San Francisco, and during his residence there held several other municipal offices, being the first mayor of the city. In 1852 he returned to Pennsylvania, and settled on his farm in Westmoreland co. In July, 1856, he was appointed governor of Kansas, but resigned that office in March, 1857 (see Kansas), and returned to Pennsylvania. In 1861 he raised and equipped the 28th regiment Pennsylvania volunteers, and was assigned to duty upon the Potomac. He commanded in several successful engagements in the autumn of 1861, occupied Leesburg, Va., in March, 1862, and was made brigadier-general of volunteers in April, 1862. He was severely wounded in the arm at the battle of Cedar mountain, and is now (December, 1862) stationed at Harper's Ferry.

GEFFRARD, Fabre, president of the republic of Hayti, born on the island of St. Domingo in 1806. His father was one of Dessalines' generals, and was associated with Pétion in 1806 in the preparation of the Haytian constitution. Young Geffrard entered the army at the age of 15, in 1843 became captain, and in the revolution of that year took part against President Boyer. In 1845 he was appointed lieutenant-general, in which capacity he distinguished himself alike for military tact and humanity. The greatest obstacle to the prosperity of Hayti has been the hatred between the pure negroes and the mulattoes. In the course of this revolution of 1843-'6 the blacks had gained the ascendency, and were disposed to wage a war of extermination against the mulattoes. Geffrard, who was himself a *griffe*, that is, having only ⅛ white blood, and therefore ranked with the blacks, prevented this wholesale slaughter. Riché, a full black, became president in 1846, and his jealousy of his popular general led him to subject him to a court martial; but the sudden death of Riché, and the friendship of Soulouque, who was president of the court, led to his acquittal. Soulouque, who succeeded Riché, created him duke, and placed him in command of his army, after two or three defeats suffered by himself had led him to desire a more skilful commander. Geffrard won several important battles against the Dominicans; but Soulouque became jealous of him and ordered his arrest. Geffrard made his escape, joined a party who were already preparing a revolution, and landing at Gonaives with 6 men about Jan. 1, 1859, soon made himself master of that place, and of the northern part of the island. He entered the capital Jan. 15, the day which Soulouque had fixed upon for the massacre of the principal families of the town, and among them the wife and daughters of Geffrard. Soulouque and his family were made prisoners, and would have been put to death, but at the peril of his own life Geffrard protected them, and sent them to Kingston, Jamaica. The republic was now restored, and Geffrard proclaimed president. He at once set about reforming the administration, improving the finances, reorganizing the army, diminishing its numbers but increasing its efficiency, encouraging immigration, establishing schools and colleges, and reviving trade. All religions were tolerated, but while the Roman Catholic was still considered the religion of the state, profligate priests were driven from the island, and a concordat was signed with the pope. These reforms were not effected without serious opposition, and repeated plots for the president's assassination were discovered. In Sept. 1859, his daughter was murdered in an attempt by a band of conspirators to take Geffrard's own life. Of the 50 persons implicated in this affair, 17 were put to death.

GENTRY, Meredith P., a representative of Tennessee in the confederate congress, born in North Carolina, studied law, settled at Franklin, Williamson co., Tenn., was a whig in politics, and represented with ability and influence the 7th district of that state in congress from 1839 to 1843, from 1845 to 1847, and from 1847 to 1853. Like the great body of southern whigs, he was opposed to the secession doctrines held by the democrats of the slaveholding states; but after the outbreak of the civil war in 1861, he enlisted in the confederate cause, and represents in the confederate congress the district he formerly represented in the congress of the Union.

GIBBON, John, brigadier-general of volunteers in the U. S. army, born in Pennsylvania about 1827, was graduated at West Point in 1847 and appointed brevet 2d lieutenant in the 3d artillery, and soon afterward 2d lieutenant in the 4th artillery; became 1st lieutenant in Sept. 1850; was assistant instructor in artillery at West Point in 1854 and 1856; and became a captain Nov. 2, 1859. He was made a brigadier-general of volunteers May 2, 1862, and took command of a brigade in the division of Gen. Rufus King in the army corps of Gen. McDowell. He was highly commended by Gen. Pope for good conduct in the engagement at Centreville, Aug. 28 (see Bull Run), and also bore a part in the battle of South mountain (see Antietam). He has published "The Artillerist's Manual" (New York, 1859).

GILBERT, Charles C., brigadier-general of volunteers in the U. S. army, born in Ohio about 1827, was graduated at West Point in 1846 and appointed brevet 2d lieutenant in the 3d infantry; became 2d lieutenant in the 1st infantry in Sept. 1846, assistant professor of ethics at West Point in 1849, 1st lieutenant in 1850, and captain Dec. 8, 1855; distinguished himself in conflicts with Indians in Texas in Sept. 1856; and was appointed a brigadier-general of volunteers in Sept. 1862, and ordered to the army then under Gen. Buell. He took part in the battle of Perryville, Ky., Oct. 8.

GILLMORE, Quincy Adams, brigadier-general of volunteers in the U. S. army, born at Black River, Lorain co., O., in 1825. He was graduated at West Point, first of his class, in 1849, and assigned to the corps of engineers, becoming 1st lieutenant in 1856, and captain in 1861. From 1849 to 1852 he was employed on the fortifications of Hampton roads, Va., and was then for 4 years assistant instructor of practical engineering at West Point, during the last year of which he was also quartermaster and treasurer of the military academy. From 1856 to 1861 he was employed in New York city in purchasing and forwarding supplies for fortifications. In Oct. 1861, he was appointed chief engineer of the expedition against the southern coast under Gen. T. W. Sherman. He superintended the construction of the fortifications at Hilton Head, and planned and carried out the operations for the capture of Fort Pulaski, an account of which he published in 1863 (8vo., New York). He was appointed brigadier-general of volunteers April 28, 1862. In Sept. 1862, he was assigned to the command of the district of western Virginia.

GIOBERTI, Giovanni Antonio, an Italian chemist, born in the village of Mangardino, Piedmont, Oct. 28, 1761, died Sept. 14, 1834.

He was the first to introduce the principles of Lavoisier into Italy; in 1790 became perpetual secretary of the society of agriculture at Turin, in which science he effected great improvements; was a member of the provisional government established by the French in 1798, and was imprisoned by the Austrians in 1799. In 1800 he was made professor of rural economy, and in 1802 of chemistry and mineralogy in the university of Turin, and henceforth devoted himself exclusively to science. He was the author of numerous publications on the principles of chemistry, and on their application to the useful arts. The Giobertine tincture (*tinctura Giobertina*), discovered by him, is a chemical preparation for restoring ancient writings which have become illegible, either from the fading of the color of the ink, or from the partial washing away of the original writing to make room for another. (See PALIMPSEST, vol. xii.) It was found that by the application of diluted muriatic acid and of prussiate of potash to the parchment previously moistened in water, the oldest and most faded MS. was almost wholly restored; and on this Gioberti based the prescription which bears his name. It was used by Peyron in restoring the fragments of the Theodotian Codex (1824), and by Pertz in deciphering the palimpsest of Granus Licinianus and fragments of Livy (1848). The *Codex Ephraemi*, a Greek MS. of the Old and New Testaments, written in the 5th century, and erased in the 12th to make room for a Greek translation of the writings of Ephraem Syrus, was restored by this process in 1834-'5, and all that remains of it was published by Tischendorf in 1843.

GIVET, a town of France, department of Ardennes, on the Meuse, 26 m. N. N. E. from Mézières, on the Belgian frontier; pop. 5,800. It is a fortified place of considerable importance, its principal defence being the citadel of Charlemont on an adjacent height. The town consists of Le Grand Givet, or Givet-Notre-Dame, and Le Petit Givet, or Givet-St.-Hilaire, which are situated on opposite sides of the Meuse and connected by a bridge built by Napoleon I.

GLADDEN, ADLEY H., a general in the service of the confederate states, born in South Carolina, mortally wounded at the battle of Shiloh, April 6, 1862. He was major in Col. Butler's "Palmetto" regiment of South Carolina volunteers during the Mexican war, and became lieutenant-colonel and commander of the regiment at Churubusco, where both his superior officers were killed. He was severely wounded in the conflict at the Belen gate. When the civil war broke out he was appointed brigadier-general in the southern army. He was assigned a brigade in Withers's division of Bragg's corps, was wounded on the first day of the battle of Shiloh, and died soon afterward.

GOLDSBOROUGH, LOUIS MALESHERBES, an American naval officer, born in Washington, D. C., Feb. 18, 1805. His commission as midshipman in the U. S. navy was dated in June 1812, but he did not actually enter the service till 1816, when he joined the Independence (74), under Capt. Bainbridge. From 1817 to 1824 he cruised in the Mediterranean and Pacific, being most of the time under Capt. Stewart on board the Franklin. In Jan. 1825, he was promoted to be lieutenant. Having obtained leave of absence for the purpose of visiting Europe, he passed some time in study at Paris, and in 1827 joined the North Carolina, Capt. Rogers, in the Mediterranean. While cruising in the schooner Porpoise in the Grecian archipelago, his vessel fell in with a craft which had been captured by Greek pirates. Lieut. Goldsborough, with 35 officers and men, was ordered to retake her with the schooner's boats, and accomplished his undertaking after killing 90 of the piratical crew. He returned to the United States in the Delaware, Capt. Crane, in 1830, and was placed in charge of the depot of charts and instruments (since transformed into the national observatory), which was founded by his suggestion. In 1833 he removed to Florida, taking with him a colony of Germans to cultivate lands belonging to his father-in-law, the Hon. William Wirt. During the Seminole war he commanded a company of mounted volunteers, and also an armed steamer. In 1841 he was promoted to be commander. He was second in command on board the Ohio at the bombardment of Vera Cruz, commanded a body of the Ohio's crew detailed for shore service at the taking of Tuspan, and after the Mexican war was senior naval member of a joint commission of army and navy officers appointed to explore California and Oregon, and report upon various military matters. In 1855 he became captain. When the civil war broke out he was in command of the frigate Congress, on the Brazil station. Returning to the United States in Aug. 1861, he was appointed flag officer, and the next month placed in command of the north Atlantic blockading squadron, his flag ship being the Minnesota. With Gen. Burnside he commanded the joint military and naval expedition to the sounds of North Carolina, and for his services in the capture of Roanoke island received the thanks of congress on the recommendation of the president. He dispersed and destroyed the confederate fleet under Commodore Lynch in the North Carolina waters, and immediately after the attack of the Merrimac upon the Congress and Cumberland was ordered to take charge of naval affairs in Hampton roads. He was appointed second on the list of active rear admirals in July, 1862.

GORDON, GEORGE H., brigadier-general of volunteers in the U. S. army, born in Charlestown, Mass., in 1826. He was graduated at West Point in 1846, and assigned to the mounted rifles as brevet 2d lieutenant. He served under Gen. Scott in the Mexican war, and won the brevet of 1st lieutenant for gallantry at Cerro Gordo, where he was severely wounded. He was commissioned 1st lieutenant in 1853, resigned in 1854, and entered the Cambridge law school. Admitted to the bar, he practised his profession until 1861, when he raised a regiment, received a commission as colonel, and joined Gen. Patterson in Pennsylvania, and was afterward made military governor of Harper's Ferry. In 1862 he commanded a brigade under Gen. Banks, and for his conduct in the retreat from Strasburg to Williamsport was made a brigadier-general of volunteers, June 9, 1862. He was at the 2d battle of Bull run, and in the battle of Antietam fought with his brigade in Gen. A. S. Williams's division of Mansfield's (now Slocum's) army corps.

GORMAN, Willis Arnold, brigadier-general of volunteers in the U. S. army, born near Flemingsburg, Ky., Jan. 12, 1814. He studied law, and in 1825 commenced its practice in Bloomington, Ind. In 1837–'8 he was clerk of the Indiana senate, was then for several years a member of the state legislature, and on the breaking out of the Mexican war became major of the 3d Indiana volunteers, under Col. James H. Lane. At the battle of Buena Vista he commanded an independent battalion, and was severely injured by falling with his horse. In 1847 he raised the 4th Indiana volunteers, which he commanded in several battles, and in 1848 was appointed civil and military governor of La Puebla. At the close of the war he was elected by the democratic party a member of congress (1849), where he served 4 years, and in 1853 was appointed governor of the territory of Minnesota. He was a member of the Minnesota constitutional convention in 1857, and afterward practised law in St. Paul until 1861, when he was chosen colonel of the 1st Minnesota volunteers. He was appointed brigadier-general of volunteers Sept. 7, 1861, and assigned to a command in the army of the Potomac. He was in the battles of Ball's bluff and West Point, led a bayonet charge at the battle of Fair Oaks, and had a brigade in Howard's division of the 2d army corps in the battle of Antietam. In Nov. 1862, he was ordered to report to Gen. Curtis.

GRAHAM, Lawrence Pike, brigadier-general of volunteers in the U. S. army, was appointed from Virginia 2d lieutenant in the 2d dragoons, Oct. 13, 1837, became 1st lieutenant in Jan. 1839, and captain in Aug. 1843; was brevetted major for gallantry at Palo Alto and Resaca de la Palma, May 9, 1846; became major June 14, 1858, lieutenant-colonel of the 5th cavalry Oct. 1, 1861, and brigadier-general of volunteers Aug. 31, 1861.

GRANGER, Gordon, major-general of volunteers in the U. S. army, born in New York about 1825, was graduated at West Point in 1845 and appointed a brevet 2d lieutenant in the 2d infantry; transferred to the mounted rifles July 17, 1846; became 2d lieutenant May 29, 1847; was brevetted 1st lieutenant for gallantry at Contreras and Churubusco, Aug. 20, and captain for gallantry at Chapultepec, Sept. 12, 1847; became 1st lieutenant in May, 1852; distinguished himself in conflict with the Indians on the Nueces river, April 13, 1856; became a captain in the 3d cavalry May 5, 1861, and a brigadier-general of volunteers March 26, 1862. He has served in the West under Gens. Halleck and Grant, took part in the battles of Iuka and Corinth, and was promoted to be a major-general in Oct. 1862, at the same time that he was ordered to the department of the Ohio, where he commands the district of central Kentucky.

GRANGER, Robert S., a brigadier-general in the U. S. army, born in Ohio about 1817, was graduated at West Point in 1838 and appointed 2d lieutenant in the 1st infantry; became 1st lieutenant in March, 1839, and assistant commissary of subsistence in Feb. 1840; was assistant instructor in infantry tactics at West Point from July, 1843, to Aug. 1844; became a captain in Sept. 1847; commanded Fort Lancaster in Texas in 1857–'8–'9; became major Sept. 9, 1861, and a brigadier-general of volunteers in Oct. 1862.

GRANT, Ulysses S., major-general of volunteers in the U. S. army, born at Point Pleasant, Clermont co., O., April 27, 1822. He was graduated at West Point in 1843, and brevetted a 2d lieutenant in the 4th infantry. At the commencement of the Mexican war he joined the army under Gen. Taylor on the Rio Grande, and participated in the battles of Palo Alto, Resaca de la Palma, and Monterey. Subsequently his regiment joined Gen. Scott before Vera Cruz, and Lieut. Grant took part in every engagement fought between that city and Mexico, receiving brevets of 1st lieutenant and captain for meritorious conduct at Molino del Rey and Chapultepec. In 1852, while serving in Oregon, he was promoted to a captaincy, and in the following year he resigned his commission and settled in St. Louis. In 1859 he removed to Galena, Ill., where he was engaged in commercial pursuits when the civil war broke out. He was one of the first to offer his services to the country, and was commissioned by the governor of Illinois colonel of one of the regiments of that state, with which he immediately went into active service in Missouri. In Aug. 1861, he was appointed a brigadier-general of volunteers, and assigned to the command of the district of Cairo. He immediately occupied Paducah, Ky., and soon after led an expedition to Belmont, on the Mississippi river, opposite the confederate stronghold of Columbus, where he broke up the enemy's camp and only retired upon being threatened by a superior force, the loss being heavy on both sides (Nov. 7). He continued at Cairo until Feb. 1862, when he received command of the land forces destined to move against Fort Henry on the Tennessee river. He arrived too late to coöperate in the reduction of this post, which capitulated to the gunboat fleet under Flag Officer Foote on Feb. 6, but marched immediately afterward with all his available force upon Fort Donelson. (See Fort Donelson.) For his conduct at the siege and capture of that post he was promoted to be a major-general. During the next few weeks he led his forces up the Tennessee river to Savanna and Pittsburg Landing; and while awaiting the arrival of reënforcements under Gen. Buell, he was attacked at the latter place on the morning of April 6, by an overwhelming confederate force under Gens. A. S. Johnston and Beauregard. After an obstinately contested battle the Union forces were driven back toward the river, where, by the aid of their artillery massed in batteries and of the supporting gunboats, they made a successful stand and kept the enemy at bay. During the night the expected reënforcements arrived, and the battle was renewed the next day with such vigor that all the ground lost by the national troops was recovered, and the confederates were pushed back to their intrenchments with great slaughter. A charge of 6 regiments led by Gen. Grant was the decisive movement of the day. When Gen. Halleck took the chief command in the West, Gen. Grant became second in command, without being assigned to any particular district. In Sept. 1862, he was appointed to the command of the army of West Tennessee, and fixed his head-quarters at Jackson, Tenn. His forces constitute the 13th army corps.

GRAYSON, John Breckinridge, a general in the service of the confederate states, born in Kentucky about 1807, was graduated at West Point in 1826 and appointed brevet 2d lieutenant in the 3d artillery; became 2d lieutenant in the 2d artillery July 1, 1826, 1st lieutenant April 30, 1846, assistant commissary of subsistence in Aug. 1834, paymaster in May, 1837, commissary of subsistence with the rank of captain July 7, 1838, and captain in the 2d artillery Dec. 11, 1838; relinquished his rank in the line June 18, 1846; was chief of commissariat to the army of Gen. Scott during the campaign in Mexico; was brevetted major for gallantry at Contreras and Churubusco, and lieutenant-colonel for gallantry at Chapultepec; and was made commissary of subsistence with the rank of major, Oct. 21, 1852. He resigned July 1, 1861, and was at once appointed a brigadier-general in the provisional confederate army, but has since died.

GREENBRIER, a river of Virginia, which gives name to an engagement fought Oct. 3, 1861. A confederate force, numbering about 9,000, under command of Gen. H. A. Jackson, were intrenched on the bank of the river, on the turnpike from Beverly to Staunton, about 13 m. from the Union camp at Cheat mountain summit; they were posted on a high and steep elevation known as Buffalo hill. Their camp was placed at a sharp turn of the road, and could not be seen till the advancing column was near it; the hill was terraced, and the defences of the position rose one above another to a considerable height. On the night of Oct. 2, Gen. J. J. Reynolds, with a Union force of about 5,000, left Cheat mountain for a reconnoissance of the confederate position; the only attack proposed was upon the front, with artillery. The confederates had placed a considerable body of infantry at a point in the road before them, and three quarters of a mile from their intrenchments. A furious charge of the Union troops, who reached the spot early on the 3d, drove this force from their ambush, sending them to their camp in confusion and with serious loss. A hot artillery fire was then opened upon the confederate works, and in less than an hour their first range of guns were silenced, and all the men driven from the lowest intrenchments. At that juncture a confederate reënforcement of 5,000 men came from the mountains in the rear, bringing several pieces of artillery; these guns were planted in the upper works, and manned with fresh troops. An attempt was then made by the Union force, at the urgent solicitation of the officers and men, to carry the new batteries by storm; a raw regiment, however, was placed in the advance, and under the severe fire from the confederate guns it broke in confusion; before the other regiments could recover from this disturbance, Gen. Reynolds gave the order to withdraw, the purpose of his reconnoissance being in his opinion accomplished. The Union loss was 9 killed and about 35 wounded. The confederate loss in killed and wounded is not known; 13 were taken prisoners.

GREENE, George Sears, brigadier-general of volunteers in the U. S. army, born in Warwick, R. I., May 6, 1801. He was graduated at West Point in 1823, and assigned to the 3d artillery; was acting assistant professor of mathematics in the military academy from 1823 to 1826, and assistant professor of engineering in 1826-'7; became 1st lieutenant in 1829, and resigned his commission in 1836. He then became a civil engineer, and was engaged on railroad and other works in various parts of the country, and on the High bridge and new Croton reservoir in New York, until 1862, when he was appointed (Jan. 18) colonel of the 60th New York volunteers. He was commissioned brigadier-general of volunteers April 28, 1862, and assigned a command in Gen. Augur's division of Banks's army corps. On Gen. Augur's promotion he took command of the division, and fought with great gallantry under Gen. Mansfield at the battle of Antietam.

GREENE, James S., a U. S. senator from Missouri, born in Fauquier co., Va., Feb. 28, 1817, received only a common English education, removed to Alabama in 1836, and thence in 1837 to Lewis co., Mo., where he has since resided. He was admitted to the bar in 1840, was a member of the convention to revise the state constitution in 1845, was elected a representative in congress in 1846, and reëlected in 1848, was known in that body as an adherent of the so called southern rights doctrine, and in 1849 canvassed the state in opposition to the return of Mr. Benton to the U. S. senate. In 1853 he was appointed by President Pierce chargé d'affaires, and subsequently minister resident, to New Granada, whence he returned in 1856, and was again elected a representative in congress, but before taking his seat was chosen by the legislature to fill a vacancy in the U. S. senate, his official term expiring March 4, 1861. In the senate he was chairman of the committee on territories from 1858 till the close of his term, and distinguished himself by opposing the admission of Kansas into the Union except with a constitution establishing slavery. In the last session of the 36th congress, just preceding the inauguration of President Lincoln, he on all occasions advocated the cause of the seceding states, and resisted in their interest all attempts to settle the existing differences by a new compromise. On leaving Washington he at once returned to Missouri, and, though not holding any military command under the confederate government, has been a constant promoter of the civil war in that state.

GREGG, Maxcy, a general in the service of the confederate states, born in Columbia, S. C., in 1814. He is the oldest son of James Gregg, long an eminent lawyer of Columbia; was graduated at the South Carolina college in 1836, studied law, and was admitted to the bar in 1839. He was appointed major in the 12th infantry, March 24, 1847, and was disbanded with the regiment at the close of the Mexican war, July 25, 1848. He has been for many years colonel of a regiment of South Carolina militia, and was a prominent member of the state convention in Dec. 1860, in which he was one of the committee appointed to prepare the ordinance of secession. He subsequently entered the military service, and now (Dec. 1862) holds the rank of brigadier-general.

GRIFFIN, Charles, brigadier-general of volunteers in the U. S. army, born in Ohio about 1827, was graduated at West Point in 1847 and appointed brevet 2d lieutenant in the 4th artillery; 2d lieutenant in the 2d artillery, Oct. 12, 1847; 1st lieutenant June 30, 1849; captain in the 5th artillery, April 25, 1861; and brigadier-general of volunteers, April 28, 1862. He served in Morell's division of Fitz John Porter's corps in the campaign of the Chickahominy, was present at the second battle of Bull run, Aug. 28, 1862, and was charged by Gen. Pope in his report with having refrained from taking part in the action while he "spent the day in making ill-natured strictures upon the commanding general in the presence of a miscellaneous assemblage." He was arrested for trial on this charge, but was released in order that he might take part in McClellan's campaign in Maryland in September. A court martial for his trial has since been ordered.

GROVER, Cuvier, brigadier-general of volunteers in the U. S. army, born in Bethel, Me., July 24, 1829. He was graduated at West Point in 1850, and appointed brevet 2d lieutenant in the 1st artillery. In 1855 he became 1st lieutenant in the 10th infantry, and in 1858 captain. He was appointed brigadier-general of volunteers April 14, 1862, and assigned to a brigade in Heintzelman's corps of the army of the Potomac. At the second battle of Bull run his brigade fought under Gen. Hooker, and distinguished itself by a bayonet charge. When Gen. Hooker was placed in command of all the troops in and around Fairfax, Gen. Grover took Hooker's division.

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HACKLEMAN, Pleasant A., brigadier-general of volunteers in the U. S. army, born in Indiana, killed at the battle of Corinth, Oct. 4, 1862. He was a member from Indiana of the peace conference which met at Washington Feb. 4, 1861; and after the call for troops by the president, he entered the service as colonel of the 16th Indiana volunteers, one of the first regiments enlisted for 12 months. After the first battle of Bull run he was ordered by Gen. McClellan to report to Gen. Banks, then near Harper's Ferry. In August his regiment was assigned to Abercrombie's brigade, and in October was removed to Darnestown, Md. In Feb. 1862, Col. Hackleman was stationed near Frederic, Md., and advanced with the first brigade in Gen. Williams's division into the Shenandoah valley, where he served until May, when, his regiment's term of service having expired, it returned to Indiana. He was appointed a brigadier-general of volunteers for meritorious service, April 28, 1862, and in June was ordered to report to Gen. Grant in the South-West, where he served till his death.

HALLECK, Henry Wager, major-general in the U. S. army, born in Westernville, near Utica, N. Y., in 1816. After a preliminary academical education and a brief residence at Union college, N. Y., he entered the military academy at West Point, was graduated in 1839, ranking 3d in a class of 31, and appointed brevet 2d lieutenant of engineers, and until June, 1840, held the position of assistant professor of engineering. From 1841 to 1844 he was employed on the fortifications in New York harbor, and in 1845 travelled over the greater part of Europe, examining carefully the military establishments of the chief countries. During the winter of 1845–'6 he delivered before the Lowell institute of Boston a series of lectures on the science of war, subsequently published under the title of "Elements of Military Art and Science," with an introductory chapter on the "Justifiableness of War," and of which a 2d edition containing much additional matter appeared in 1861. In the summer of 1846 he was despatched to California and the Pacific coast, where he was in active service in both a civil and military capacity during the war with Mexico. For gallant conduct at the affairs of Palas Prietas and Urias, Nov. 18 and 19, 1847, he was brevetted a captain, having attained the grade of 1st lieutenant in 1845; and he subsequently greatly distinguished himself at San Antonio and Todos Santos, having at the former place with a few mounted volunteers, with whom he had made a forced march of 120 m. in 28 hours, surprised a Mexican garrison of several hundred men, and nearly succeeded in capturing the governor. He also acted on the staff of Commodore Shubrick in the naval and military operations on the Pacific coast in 1847–'8, and in that capacity participated in the capture of Mazatlan, of which place he was made lieutenant-governor. He was secretary of state of the province of California, under the military governments of Gens. Mason and Riley, from 1847 to Dec. 1849, and during the same period acted as auditor of the public revenue. He held a seat in the convention which met in 1849 to adopt a state constitution, and as a member of the drafting committee had a large share in the preparation of that instrument. Between 1850 and 1854 he discharged the duties of judge advocate and inspector of lighthouses; and in the latter year, having then attained the rank of captain of engineers, he resigned his commission and commenced the practice of law in San Francisco. For many years he was the senior partner of one of the largest law firms in California, and was also director-general of the New Almaden quicksilver mines. Soon after the breaking out of the civil war he was appointed a major-general in the U. S. army, his commission bearing date Aug. 17, 1861; and in November he succeeded Fremont in the command of the western department, fixing his head-quarters at St. Louis. He entered with much activity upon the discharge of his official duties, and had the principal direction of the military movements that resulted in the successful campaign in the West which commenced in Feb. 1862. One of his first military orders, dated Nov. 20, 1861, and known as order No. 3, directed that no fugitive slaves should be "permitted to enter the lines of any camp, or of any forces on the march, and that any within such lines be immediately excluded therefrom;" the reason given being that important information was often conveyed to the enemy by such persons. In a letter to F. P. Blair, jr., written some time afterward, he explained that the order was a military and not a political one, observing: "I am willing to carry out any lawful instructions in regard to fugitive slaves which my superiors may give me, and to enforce any law which congress may pass; but I cannot make law, and will not violate it. You know my private opinion on the policy of a law confiscating the slave property of rebels in arms. If congress shall pass it, you may be certain I shall enforce it." In the early part of April, 1862, having directed the campaign in the South-West from his permanent head-quarters since the preceding February, he assumed the command of the army before Corinth, the investment of which place he conducted to a successful issue. The disastrous ending of the campaign of the Chickahominy having suggested to the president the appointment of a person of large military experience to reside in Washington and there direct the movements of the various generals in the field, he was on July 11 appointed general-in-chief of all the land forces of the United States, and on the 15th of the month entered upon his new duties. He soon afterward visited McClellan's army at Harrison's Landing on the James river, and upon returning to Washington ordered the advance of Gen. Pope toward the Rapidan, under cover of which McClellan was enabled to retire down the peninsula, unmolested, to Yorktown. In addition to the publication already mentioned, Gen. Halleck has produced a "Practical Treatise on Bitumen and its Uses," a "Report on Military Defences," translations of the "Mining Laws of Spain and Mexico" and "De Fooz on the Law of Mines," and a treatise entitled "International Law and the Laws of War" (1861).

HAMILTON, Charles S., brigadier-general of volunteers in the U. S. army, born in New York about 1824, was graduated at West Point in 1843 and appointed brevet 2d lieutenant in the 2d infantry, 2d lieutenant in the 5th infantry Nov. 17, 1845, and 1st lieutenant June 30; was brevetted captain for gallantry at Contreras and Churubusco, Aug. 20, and severely wounded at Molino del Rey, Sept. 8, 1847; was regimental quartermaster from March, 1848, to Jan. 1, 1849; resigned April 30, 1853, and settled in Wisconsin; commanded the 3d regiment of volunteers sent forth from that state in 1861, was attached to the command of Gen. Patterson at Harper's Ferry, and was made a brigadier-general of volunteers, his commission dating from May 17, 1861. He served in the army of the Potomac, and was dismissed from it by Gen. McClellan for complaining that his men were required to do excessive work in the trenches before Yorktown. He was subsequently ordered to the army of the Mississippi, and distinguished himself in the battle of Corinth, Oct. 4, 5, 6, and assumed command of the district of West Tennessee, Oct. 20, 1862.

HAMILTON, Schuyler, major-general of volunteers in the U. S. army, born in New York, July 25, 1822. He is a son of John C. Hamilton and a grandson of Alexander Hamilton, was graduated at West Point in 1841, commissioned a 2d lieutenant in the 1st infantry, and stationed for several years on the western frontier, where, with the exception of a short residence at West Point as assistant instructor of tactics, he remained until the breaking out of the Mexican war, when he joined the army under Gen. Taylor. For his conduct at Monterey, where he was severely wounded, he was brevetted a 1st lieutenant, and in the spring of 1847 he joined the army under Gen.

Scott in the valley of Mexico and was appointed acting aid to the commander-in-chief. On Aug. 3, while on a hazardous reconnoissance in command of a body of dragoons, he was attacked near Miraflores by a greatly superior force of Mexican lancers, and in a desperate hand-to-hand encounter, in which he killed several of his adversaries, received a severe lance wound in the left side. For his "gallant and meritorious conduct" in this affair he was brevetted a captain. He continued on the staff of Gen. Scott until 1854, having in the interval filled the office of secretary of the board of commissioners of the military asylum; and in 1855 he resigned his commission and took up his residence at Branford, Conn. After the fall of Fort Sumter he repaired to New York, and, joining the 7th regiment of militia of that state as a private, accompanied it to Annapolis in the capacity of aid to Col. Lefferts. At Annapolis he acted as aid to Gen. Butler. He marched with the 7th regiment to Washington, and soon after his arrival entered the military family of Gen. Scott with the rank of colonel of cavalry. Upon the retirement of Scott from active service he was commissioned a brigadier-general of volunteers, and in Oct. 1861, accompanied Gen. Halleck to Missouri, where he was placed in command of the military district of St. Louis. In the latter part of Feb. 1862, he assumed the command of a division in the army of Gen. Pope, and participated in the capture of New Madrid on the Mississippi, a few miles below Island No. Ten (March 14). For the purpose of compelling the enemy to evacuate the latter position, which completely commanded the river, a coöperation between the troops of Pope and the fleet of Flag Officer Foote became indispensable. The overflowed state of the country rendered it impossible for Pope to march his forces above New Madrid to the neighborhood of the Union gunboats, and he was without transports to convey them across to any point south of Island No. Ten. In this dilemma Hamilton proposed to Pope to cut a navigable passage through the inundated forest on the base of the peninsula at the south side of which New Madrid is situated, by which transports might be floated from above to his assistance, out of reach of the enemy's batteries. The project was at once undertaken, and in 19 days, in the face of most formidable obstacles, by sawing off trees below the surface of the water and otherwise removing them, a channel 12 miles long and 50 feet wide was completed, through which on the night of April 6 a fleet of steamboats and transports was successfully conveyed. The army was immediately transported across the river, and Island No. Ten, with a large number of troops, 124 guns, and an immense amount of material of war, fell into the hands of the national commanders. Gen. Hamilton was subsequently sent with his division to reënforce the army of Gen. Halleck in front of Corinth, commanded the reserve in the action at Farmington, and after the evacuation of Corinth followed Pope in pursuit of the enemy. In June he returned to New York, incapacitated for active duty by severe illness contracted during the campaign. Immediately on his recovery he was promoted to be major-general "for meritorious services at New Madrid and Island No. Ten," and ordered (November, 1862) to join Gen. Rosecrans in the West. Gen. Hamilton is the author of a "History of the National Flag of the United States" (New York, 1853).

HAMPTON, Wade, a general in the service of the confederate states, born in Columbia, S. C., about 1828. He is a grandson of the U. S. general of the same name. (See Hampton, Wade, vol. viii.) His father has been reported to be the richest planter of the slave states, the number of his slaves having sometimes been estimated at 5,000. The son was educated as a planter, and his life had been that of a country gentleman till the secession of the state in 1860, when he entered its military service, and has since taken an active part in the events of the war in Virginia. He commanded a regiment known as the Hampton legion in the first battle of Bull run, where he was wounded. He was now promoted to be a brigadier-general, fought in the campaign of the Chickahominy, was in the army which invaded Maryland under Gen. Lee in Aug. 1862, fought in the battle of Antietam, was in the movement of Gen. Stuart through Maryland into Pennsylvania in October, and was appointed by him governor of Chambersburg during the brief occupation of that place by the confederate forces. His brother, Col. F. Hampton, who now commands the legion, married in 1855 Miss S. Baxter of New York city.

HAMPTON ROADS, Battle of, a naval action fought in Hampton roads, the estuary of James river, Va., on Saturday and Sunday, March 8 and 9, 1862. As the chief interest of this battle arises from the conflict, on the second day, between the floating batteries Monitor and Merrimac (or Virginia), it will be necessary to begin with some description of these vessels. For the history and usual construction of floating batteries, and of the earlier iron-clad ships, see Battery, Gun Boat, and Ship.—Upon the abandonment by the U. S. forces of Norfolk and the Gosport navy yard, April 20, 1861, the U. S. steam frigate Merrimac, then under repairs, was sunk. The confederate forces having taken possession of Norfolk, the frigate was raised, and cut down nearly to the water's edge; and her sides having been plated with iron, a bomb-proof covering of railroad iron, in form of the sloping roof of a house, was thrown over the whole length of her gun deck. Her armament appears to have been 4 11-inch guns on each side, and 2 100-pounders, one each at bow and stern. The bow was further armed with a strong projecting beak of steel, for piercing the sides of an enemy. Nine months were occupied in thus converting her into a floating battery; she was named the Virginia, and on being launched was placed under command of Capt. Franklin Buchanan.—The subject of the superior effectiveness of gunboats and iron-clad frigates over wooden ships of war having been strongly urged in this country for some time previous, by Mr. Donald McKay, ship builder at Boston, and by others, by an act of congress of Aug. 3, 1861, a board of three naval officers had been constituted, to whom plans for armored steam ships and batteries should be submitted, and an appropriation for the construction of such was made. Among the specifications sent in to this board was that of Capt. John Ericsson, of New York, for a shot and shell-proof battery. The board recommended the making of one such battery as an experiment, the time allowed to be 100 days; draught, 10 ft.; displacement, 1,245 tons; speed per hour, 9 statute miles; cost, $275,000. The contract with Capt. Ericsson was made Oct. 5, 1861, and the vessel completed was delivered to the U. S. government for trial, March 5, 1862. Of this vessel, named by its constructor the Monitor, the hull is formed of two distinct parts, a lower and an upper, both flat-bottomed. The lower hull is built of ⅜-inch iron, 124 ft. long, 34 ft. wide at top, 6½ ft. deep; its sides incline at an angle of about 51° with the vertical; the ends sharp, the bow projecting, and coming to a point at an angle of 80°. The upper hull is 174 ft. long, 41 ft. 4 in. wide, with perpendicular sides 5 ft. high. At the middle of the sides it juts over the lower hull 3 ft. 7 in. on each side; at each end, 25 ft. Of the upper hull, the sides are of white oak, 2½ ft. thick, with a ½-inch plating of iron within, to arrest splinters in case of a ball's penetrating the sides, and an armor of 6 inches of iron plating on the outside. The deck is flat, plated so as to be bomb-proof, and without railing or bulwark. It is formed by oak beams, 10 in. square and 26 in. apart, covered with 8-inch plank, and upon this 2 plates of iron each 1 in. thick. The lower hull can only be reached by a ball that has passed through at least 25 ft. of water; the inclination of the sides is then such as quite to forbid penetration. The draught of water is 10 ft.; and only 18 inches in height of the upper hull appear above the surface. The projecting ends of the upper hull cover the propeller and rudder in the stern and the anchor at the bow; the former being entirely out of reach of shot, and the latter carried in the upper hull, and lowered or raised by the men below, with no sign without of these movements. Upon the deck is erected a round turret or tower at about midships, 20 ft. in diameter within and 9 ft. high, and near the stern is a pilot or wheel house of square form; while low temporary chimneys can be protruded through the deck, to be withdrawn and the openings closed in time of action, and bomb-proof gratings are also fixed in the deck, through which the smoke of the fires is driven out and ventilation secured by blowers. The turret is of 8 1-inch plates, with overlapping joints, and firmly bolted together, with an additional 1-inch layer within; total thickness, 9 inches; weight about 100 tons. Ordinarily supported by a circular bed plate of composition metal in the deck, its weight in time of action is thrown upon an upright central shaft of iron, upon which the tower can revolve horizontally as desired, this and the working of the blowers being accomplished by an engine specially intended for these purposes. The top of the turret is covered with iron beams and plating, so as to be shell-proof, but perforated to secure ventilation; and small sliding iron hatchways in it allow of the entrance of the men. In its sides the turret has openings for two heavy guns, the sole armament of this battery. These are placed parallel with each other, and both directed out of the same side of the turret. The portholes are circular openings, 3 ft. above the deck, barely large enough to admit the muzzles of the guns, and controlled by iron shutters worked from within, this side of the turret being strengthened by an extra 3 inches of iron plating. The elevation of the guns is adjusted by a suitable scale fixed within. At the moment of firing, the shutter is triced up by the gunner, and, the piece being run into the portholes and fired, returns by the recoil, its return being by a friction clamp on the sides of the ways arrested at any desired point. The Monitor was armed with two 11-inch Dahlgren smooth bore guns, carrying 168-lb. round shot. The pilot house is constructed with wrought iron beams and heavily plated, having only horizontal apertures at the sides, to afford a lookout to the helmsman, and to be used, if desired, as loopholes for musketry. Thus, the deck of the battery is almost entirely bare, and the men working it and those handling the guns are alike out of sight, and protected by the iron armor. All access into the interior is so shut off, that if the battery were boarded, the men could not be reached, and the vessel could not be harmed by any ordinary means. Its prow, being sharp and very strong, serves as a beak with which wooden ships may be sunk, and its light draught affords advantages both for offence and for retreat, if required. Thus, it is designed not for operations at sea so much as for river and harbor service. The complement of men is 60, of whom 11 are officers. This battery left New York for Hampton roads, under command of Lieut. John L. Worden, March 6, in order to be in readiness for the threatened descent of the Merrimac.—Early in the afternoon of March 8 the Merrimac came out of Norfolk harbor, and, keeping the channel toward Newport News, made for the U. S. sailing vessels Cumberland and Congress, lying at the mouth of James river. The Cumberland opened fire upon her, but the balls had no effect. The confederate steamers Yorktown and Jamestown also came down the river, and took part in the engagement. The Merrimac succeeded in running her prow into the Cumberland about midships, laying open her side; and after repeating the movement and sinking her, she started for the Congress, which surrendered, and in the evening was burned. The U. S. frigates Minnesota and St. Lawrence, and gunboats Oregon and Zouave, attempted to take part in the conflict; but the first ran aground near Newport News, and the second failed to come to a close engagement, while the boats were somewhat disabled. In this condition of affairs night closed the contest. The Monitor, after a stormy and apparently hazardous voyage, in which for a time the waves rolled over her to such an extent that the water poured through the gratings on the deck, and even through the top of the turret, threatening to extinguish the fires, and almost suffocating those in charge with the smoke and fumes, which could not be properly expelled, arrived in the roads at about 10 P. M. of the 8th, and immediately went to the protection of the Minnesota. Her officers and crew, who had not slept the night previous, held themselves through this night in readiness for an engagement. Early on Sunday morning, the 9th, the Merrimac, which had lain at anchor near Sewall's point, advanced toward and fired upon the Minnesota, apparently not heeding the Monitor, which, beside being so low that little more than her turret appeared above the water, was in fact scarcely one third the dimensions of the confederate battery. From the time, however, that the 11-inch guns of the Monitor opened upon her, the attack was directed chiefly to the new antagonist. The action became close, and the repeated broadsides of the Merrimac having no effect upon the plating of the Monitor, the former attempted to run her down and sink her; the vessels came into contact 5 times, a gun of the Monitor each time being fired directly against the plating of her opponent, and herself receiving no damage. The Monitor, having withdrawn after a time to some distance to hoist shot into her turret, returned and recommenced the fight. Soon after, by a shot which entered one of her ports, the Merrimac appeared to be in a disabled condition; and her commander also being wounded at near 2 o'clock, she made away gradually to the batteries at Sewall's point. The Minnesota and the gunboat Whitehall both participated in the engagement of this day, and both received some injury and suffered loss of men; while it is believed that some of the shot thrown in broadsides from the former damaged the Merrimac, and also produced loss of life upon her. It has been reported, and denied, that the tremendous concussion of the balls of the Monitor upon the sides of the Merrimac succeeded in shattering the woodwork within the iron plating, though it is not known that any of the balls actually penetrated her armor. The iron prow of the Merrimac, however, had become so wrenched in striking the sides of her antagonist, that the timbers within were started, and the vessel leaked badly. One of the last shots of the Merrimac struck the pilot house of the Monitor near the aperture through which Lieut. Worden, who observed the movements of the enemy and signalled to Lieut. Greene, the second officer, the moment for firing, was at that time looking; the blow broke one of the wrought iron beams, and stunned the officer, the flying particles of cement also seriously injuring his eyes and face. In view of the danger that another shot might complete the destruction of the pilot house, and of orders restricting the Monitor to a defensive course, Lieut. Greene, who now assumed command, did not follow the retiring Merrimac. The Monitor received no other real damage during the action, though upon her sides, deck, and turret many marks of shot were found; the deepest indentation was in a single instance on the side, amounting to $4\frac{1}{2}$ inches; on the turret the deepest was $1\frac{1}{2}$ inches; on the deck, $\frac{1}{2}$ inch. No other personal injury occurred. The Merrimac finally withdrew to Norfolk, where, during some weeks following, she was repaired and provided with heavy ordnance; she then took her station at the mouth of the Elizabeth river, guarding it, and threatening the U. S. vessels in the roads, but, on account of some defects still remaining in her working, not venturing an attack. Finally, Norfolk having been surrendered to the U. S. forces on May 10, and the Merrimac being found to draw too much water to allow of being removed up the river, she was on the 12th abandoned and set on fire, and soon after blew up.—The course and result of the engagement of March 9 in Hampton roads having established the adaptation and value of Capt. Ericsson's new form of battery, both for purposes of defence and attack, contracts were speedily entered into by the U. S. government for the construction of 9 similar batteries, or "Monitors," as they have been termed. Of these, No. 1, the Passaic, was launched at Greenpoint, L. I., April 31, 1862; No. 2, the Patapsco, at Wilmington, Del., Oct. 1; No. 3, the Nahant, at Boston, Oct. 6—each of these being of 844 tons, and intended for 2 guns; No. 4, the Montauk, 970 tons, 2 guns, at Greenpoint, Oct. 9; No. 5, the Nantucket, launched at Boston, Dec. 6; No. 6, the Lehigh, now (Dec. 1862) nearly ready to launch at Chester, Penn.; No. 7, the Sangamon, recently launched at Chester; No. 8, the Catskill, launched at Greenpoint, Dec. 6; No. 9, the Weehawken, recently launched at Jersey City. Nos. 5 to 9 are each of 844 tons, with 2 guns. Still other batteries upon the like principle have since been contracted for, including the Manhattan, Miantonomoh, and Onondaga, ranging from 1,034 to 1,564 tons burden, and several of them, as the two last named, being intended for 4 guns each. The necessity in the first Monitor of running out the guns at the time of firing, exposed them to the danger of being struck by a well directed shot of the enemy at the moment, and broken or disabled. Moreover, it was desirable, without increasing the size of the porthole, to use guns of larger caliber. Both these results could be secured, if, along with a due steadiness of the gun, the recoil upon firing could be made very slight in extent, so as to allow of discharging the piece within the turret. The experiment was tried with perfect success on Nov. 15, 1862, in the Hudson river, a few miles above New York. Three 330-lb. balls were fired, the first 2 hollow, from a 15-inch gun, the charges of powder being 20, 25, and 35 lbs., and the respective recoils 17 inches, 3 ft. 10 inches, and 2 ft. 8 inches. The feasibility at once of protecting the guns and arming with those of larger caliber being thus demonstrated, the navy department ordered the completion of all the Monitors for service with 15-inch guns, in the same manner as the Passaic.

HANCOCK, Winfield Scott, brigadier-general of volunteers in the U. S. army, born in Montgomery co., Penn., Feb. 14, 1824. He was graduated at West Point in 1844, commissioned brevet 2d lieutenant in the 6th infantry, and stationed in the Indian territory. He served in the Mexican war, where he was brevetted 1st lieutenant for his conduct at Churubusco, and before leaving Mexico was appointed quartermaster of his regiment. In 1849 he was made adjutant, and was stationed in Missouri till 1855, when he was appointed captain in the quartermaster's department, and ordered to Florida, where he remained during the campaign against the Seminoles. He was afterward sent to Kansas, and started on the expedition to Utah under Gen. Harney; but that being abandoned, he was ordered to proceed to Fort Bridger, and accompany the 6th infantry as quartermaster across the continent to Benicia, Cal. For more than two years he was stationed at Los Angeles, and in 1861 was ordered to report at Washington. In Sept. 1861, he was made brigadier-general of volunteers, and assigned to a brigade in the army of the Potomac. He served under Gen. Franklin during the campaign of the Chickahominy, distinguishing himself especially by a bayonet charge at the battle of Williamsburg, where his conduct was mentioned in Gen. McClellan's official report as "brilliant in the extreme." He took part in the campaign in Maryland, distinguished himself at Sugar Loaf mountain and Antietam, and on the fall of Gen. Richardson was placed in command of his division of Sumner's (now Couch's) army corps.

HANOVER COURT HOUSE. See Chickahominy.

HARDEE, William J., a general in the service of the confederate states, born in Georgia about 1819, was graduated at West Point in 1838 and appointed 2d lieutenant in the 2d dragoons, 1st lieutenant Dec. 3, 1839, and captain Sept. 13, 1844; brevetted major for gallantry at Medelin, Mexico, March 25, and lieutenant-colonel for gallantry at San Augustin, Aug. 20, 1847; distinguished himself at Molino del Rey; became major March 3, 1855, and commandant of cadets and instructor in cavalry, artillery, and infantry tactics at West Point in July, 1856; received, Dec. 27, 1860, from Secretary Floyd, at the request of Gov. Brown of Georgia, leave of absence for a year, that he might go to Europe to buy arms for that state; resigned his commission Jan. 31, 1861, was appointed a brigadier-general in the confederate army in June, and has served in the South-West, having for some time had command in northern Arkansas. As major-general he commanded a division of Polk's corps in the army which entered Kentucky under Gen. Bragg in Sept. 1862. In October he was promoted to be lieutenant-general. He has published "Rifle and Light Infantry Tactics" (2 vols. 12mo., Philadelphia, 1855), a work which has been extensively used on both sides during the civil war.

HARNEY, William Selby, brigadier-general in the U. S. army, born in Tennessee in 1800. He entered the army as 2d lieutenant in 1818, became 1st lieutenant in the following year, and captain in 1825, and was engaged in the Black Hawk war in 1833. In 1836 he was made lieutenant-colonel of the 2d regiment of dragoons. In the Florida war he distinguished himself in an action at Fort Mellon, and in 1841 was brevetted colonel "for gallant and meritorious conduct in several successive engagements with hostile Indians in Florida." In 1846 he was promoted to the full rank of colonel, in which capacity he served in the war with Mexico. For gallant and meritorious conduct in the battle of Cerro Gordo he was brevetted brigadier-general in 1848. On Sept. 3, 1855, he completely defeated the Sioux Indians at Sand Hills on the north fork of the Platte river. A number of Indian women and children were killed in the battle, a circumstance which led to severe strictures from the press. He was promoted to the full rank of brigadier in 1858, and made commander of the military department of Oregon, in which capacity on July 9, 1859, he took possession of the island of San Juan near Vancouver, which was claimed by the English as included within the boundaries of British Columbia. This act led to a dispute with Great Britain and to the recall of Gen. Harney from his command. He was subsequently made commander of the department of the West, and in April, 1861, while on his way from St. Louis to Washington, was arrested at Harper's Ferry by the secession authorities of Virginia and taken to Richmond, where, however, he was promptly released. He soon after in a published letter declared his opposition to secession, and his determination to remain loyal to the flag under which he had served for 40 years. On his return to St. Louis he issued several proclamations, warning the people of Missouri of the dangers of secession, and of the evil effects of a dissolution of the Union. On May 21 he entered into an agreement with Gen. Sterling Price, commanding the state militia, to make no military movement so long as the peace of the state was preserved by its authorities, and was soon afterward relieved of his command. In Sept. 1862, he was appointed to preside over a military court to inquire into the conduct of Brig. Gen. McKinstry, and before the conclusion of the investigation was ordered to Washington upon other duties of a similar character.

HARPER'S FERRY, Occupation of. The importance of this place as a strategic point was recognized by the confederates at the very commencement of the existing civil war, and immediately after the fall of Fort Sumter they despatched a considerable body of troops to occupy it. On April 18, 1861, Lieut. R. Jones, of the regular army of the United States, evacuated the place at their approach, with a small body of dismounted cavalry, having first fired the arsenal buildings, containing 15,000 stand of arms, and the workshops, and retired to Carlisle barracks in Pennsylvania. It was then occupied by a strong confederate force until the invasion of that part of Virginia by Gen. Patterson, June 14, 1861, when it fell into the hands of the Union army. The unsuccessful issue of the battle of Bull run, July 21, having compelled the relinquishment of the right bank of the Potomac by Gen. Banks, who succeeded Gen. Patterson in command, it was again occupied by the confederates, who, after the general retreat of their armies up the valley of the Shenandoah in March, 1862, evacuated the place for the second time, destroying the costly bridge of the Baltimore and Ohio railroad. Thenceforward until Sept. 15, 1862, it remained in possession of the Union forces. On Aug. 15 of that year Col. Miles, then in command, received orders from Gen. Wool, commanding the military department which included Harper's Ferry, to fortify Maryland heights on the Maryland shore of the Potomac, which is considered the key of the position. These he neglected to obey, nor, during the rapid approach of the confederate armies toward the Potomac in the latter half of August and the early part of September, did he do any thing to improve the naturally strong defences of the place. On Sept. 5 Col. Thomas H. Ford, of Ohio, assumed command of the force stationed on the heights, and, under apprehension of an attack by a portion of the confederate army which crossed the Potomac on Sept. 4–6, he soon after sent a requisition to Col. Miles for reënforcements and for tools necessary to erect defensive works. He received the reënforcements, but not the tools, and with a few borrowed axes constructed on the 12th a slight breastwork of trees, near the crest of the heights, in front of which was a slashing of timber. On that day a force of about 40,000 confederates under Gens. Jackson and A. P. Hill, detached from the invading army of Lee, appeared before the heights, from which an artillery fire was opened upon them, accompanied by slight skirmishing in front of the breastwork. By the arrival of Gen. Julius White from Martinsburg on the 12th, the total Union force at Harper's Ferry and Maryland heights was increased to about 13,000 men of all arms, of whom 2,500 were cavalry. Gen. White, though entitled to assume the command in chief, waived his right in favor of Col. Miles. The only defensive position fortified by Miles was Bolivar heights behind the town of Harper's Ferry, and this was commanded by Maryland heights, and by Loudon heights, situated on the Virginia side of the Potomac and on the left bank of the Shenandoah. Early on the morning of the 13th the confederates made an attack upon the troops stationed on the crest of Maryland heights, and drove them behind the breastwork. This was soon after attacked, and through the precipitate flight of a portion of the troops and the premature retreat of the rest, in consequence of a mistake of orders, was about midday permanently abandoned. For several hours previous Col. Miles had been on the heights, and his directions to Col. Ford upon returning to the Ferry were to spike his guns in case he was compelled to evacuate the heights, and throw his heavy siege guns down the mountain. Accordingly, at 2 o'clock in the afternoon, Col. Ford, availing himself of the discretionary power given to him by his superior, abandoned his position and withdrew his force across the river. So slow were the enemy to occupy the ground, however, that on the succeeding morning a detachment of the 39th New York volunteers (Garibaldi guard), sent there by Col. D'Utassy, succeeded in securing 4 field pieces and a wagon load of ammunition. On the 13th also a body of the enemy made a demonstration from the direction of Charlestown, which was repelled by the troops under Gen. White, and in the course of the day they began to establish batteries on Loudon heights. On the 14th they opened fire from Loudon heights, and toward the close of the afternoon from Maryland heights, while an unsuccessful infantry attack was made on the Charlestown turnpike, in which nearly the whole Union force participated. Fire was also returned from the Union batteries on Bolivar heights. On the previous evening Col. Miles had despatched a messenger to Gen. McClellan, who was then at Frederic, Md., with the main body of the Union army, to report that the position could not be held 48 hours longer unless reënforcements were sent; and on the night of the 14th the whole body of Union cavalry under command of Col. Davis cut their way through the enemy's lines, and reached Greencastle, Penn., in safety the next morning, capturing on the way an ammunition train belonging to the corps of the confederate general Longstreet. At daybreak of the 15th the confederates opened fire upon Bolivar heights from 9 different batteries, and at 7 o'clock in the morning Col. Miles represented to Gen. White and the brigade commanders that, as the ammunition of his batteries was nearly exhausted, the place could no longer be considered tenable. With the concurrence of all the officers present he gave the order to surrender; but for upward of three quarters of an hour after the white flag had been raised the enemy continued their fire, and during this interval Col. Miles was mortally wounded by the fragment of a shell. The terms of capitulation were arranged by Gen. White on the part of the garrison, and Gen. A. P. Hill for the confederates, and at about noon the latter marched into the town. The Union troops, to the number of about 11,000, were paroled; and Jackson, after occupying the place but little more than 24 hours, hastened to join Lee at Sharpsburg, Md., where he probably contributed to save the confederate army from a decided and disastrous defeat. Among the spoils which fell into the hands of the confederates were 49 cannon of various sizes, and a quantity of small arms, clothing, and stores. The Union loss did not exceed 350 in killed and wounded, and that of the confederates was about the same. During October and November, the circumstances attending the surrender of Harper's Ferry were examined by a special commission, in accordance with whose suggestions Col. Ford and other officers were dismissed the service. The conduct of Col. Miles was stated in their report to have exhibited "an incapacity amounting almost to imbecility;" and evidence was cited to show that he had paroled prisoners during the progress of the siege under circumstances which cast a suspicion upon his loyalty. Gen. Wool was censured for placing Miles in command of so important a place. The report further observes: "The general-in-chief has testified that Gen. McClellan, after having received orders to repel the enemy invading the state of Maryland, marched only six miles per day, on an average, when pursuing this invading enemy. The general-in-chief also testifies, that in his opinion Gen. McClellan could and should have relieved and protected Harper's Ferry, and in this opinion the commission fully concur."

HARRISONBURG, the capital of Rockingham co., Va., situated in the upper end of the valley of the Shenandoah, 125 m. N. W. from Richmond; pop. about 1,500. On June 6, 1862, the rear guard of the retreating confederate army commanded by Gen. T. J. Jackson evacuated this place at the approach of Gen. Fremont. The advance of the latter, consisting of the 1st New Jersey cavalry, pursuing with too much ardor, fell into an ambuscade several miles S. E. of the town, and lost its colonel and a number of men. The Pennsylvania regiment of "Bucktail rifles" and Col. Cluseret's brigade were then ordered forward to the support of the cavalry, and drove the enemy from their position in the woods, capturing their camp, with some loss, Col. T. L. Kane of the "Bucktails" being wounded and taken prisoner. The confederate general Ashby, who covered the retreat with his cavalry brigade, was among the killed on that side. At nightfall the confederates continued their retreat, leaving portions of their baggage on the way.

HARTSTENE, Henry J., an officer in the navy of the confederate states, born in South Carolina. He entered the U. S. navy from Georgia in 1828, became passed midshipman in 1835 (his warrant dating from the previous year), and in 1838 was attached to Lieut. Comdt. Wilkes's exploring expedition, as acting lieutenant on the brig Porpoise. He went with the expedition no further than Callao, returning in the store ship Relief, which had been detached from the squadron as unfit for the cruise. In Feb. 1839, he was promoted to be lieutenant; in 1851 was attached to the coast survey; and afterward commanded by appointment of the secretary of the navy the Aspinwall mail steamer Illinois. In 1855 he was promoted to be commander, and in the same year was sent to the arctic regions in search of Dr. Kane and his party, whom he rescued and brought to New York. In 1856 he was ordered to convey to England the British exploring bark Resolute, which, after being abandoned in the arctic ice, had been rescued by a New London whaler and purchased of her salvors by congress as a present to the British government. He was afterward employed in taking soundings for the Atlantic telegraph cable. At the outbreak of the civil war he was awaiting orders. Resigning his commission, he entered the confederate service, and was employed chiefly on special duty until in the summer of 1862 he became insane, and has since been in a lunatic asylum.

HARTSUFF, George L., brigadier-general of volunteers in the U. S. army, born in the state of New York, May 28, 1830. He entered the military academy from Michigan in 1848, was graduated in 1852 and appointed brevet 2d lieutenant in the 4th artillery; served in Texas and Florida; became assistant instructor in artillery and infantry tactics at West Point in 1856, and assistant adjutant-general at Washington, March 22, 1861; served at Fort Pickens, Fla., from April till July 16, and then in western Virginia under Gen. Rosecrans; and on April 15, 1862, was made a brigadier-general of volunteers. He was promoted to be major in the adjutant-general's department July 17, 1862. In the battle of Antietam he commanded a brigade in Gen. Ricketts's division of Hooker's corps, and was severely wounded.

HASCALL, Milo S., brigadier-general of volunteers in the U. S. army, born in New York about 1833, was graduated at West Point in 1852 and appointed a brevet 2d lieutenant in the 3d artillery, resigned Sept. 30, 1853, and settled in Indiana. He became in 1861 colonel of the 17th Indiana volunteers, was appointed brigadier-general April 25, 1862, and has served in the West.

HATCH, John P., brigadier-general of volunteers in the U. S. army, born in the state of New York, was graduated at West Point in 1845 and appointed brevet 2d lieutenant in the 3d infantry, but the same month was transferred to the mounted rifles (now called the 3d cavalry). He was appointed 2d lieutenant in 1847, brevetted 1st lieutenant and captain for gallantry at Contreras and Churubusco and Chapultepec, became 1st lieutenant in 1851, and captain in 1860; and at the outbreak of the civil war he was serving with his regiment near the S. W. frontier. In Sept. 1861, he was appointed brigadier-general of volunteers, and assigned a cavalry brigade under Gen. King, with which he distinguished himself by several daring reconnoissances in the neighborhood of Gordonsville, the Rapidan, and the Rappahannock. Toward the end of July, 1862, he was transferred to the infantry brigade formerly commanded by Gen. Augur; and when Gen. King was disabled by sickness in August, he took command of his division. He was wounded at the second battle of Bull run, where he was attached to Gen. McDowell's corps, and at the battle of South mountain, where his command formed the right of Hooker's corps.

HATTERAS INLET, a narrow gap through the sand beach which forms the outwork of the coast of North Carolina, about 18 m. S. of Cape Hatteras. Upon the northern side of the inlet the confederates had erected two fortifications of sand, turfed over, and mounting respectively 10 and 6 guns. The fort nearer the inlet was the larger, and was called Fort Hatteras; the other, about 700 yards further N., was called Fort Clark. On Aug. 26, 1861, a joint military and naval expedition, under command of Gen. B. F. Butler and Flag Officer Stringham, left Fortress Monroe, destined for an attack upon these forts. The fleet consisted of the Minnesota, Wabash, Pawnee, Monticello, and Harriet Lane, joined afterward by the Cumberland. The land force went by two transports, and numbered about 900. The whole fleet reached Hatteras inlet on the afternoon of the 27th, and on the morning of the 28th an effort was made to land the troops above the forts; but the heavy surf prevented the disembarkation of more than 300, who had with them two pieces of light artillery. On the same morning the fleet opened fire upon the forts, the result of the day's bombardment being the evacuation of Fort Clark. On the morning of the 29th the firing was resumed. At 11 o'clock a white flag was raised on Fort Hatteras, and Flag Officer Samuel Barron, in command of the confederate forces, made an unconditional surrender. The fruits of this victory were 700 prisoners, 25 pieces of artillery, 1,000 stand of arms, a large quantity of ordnance stores, and three valuable prizes. The confederate loss, not officially stated, was supposed to be 12 or 15 killed and 35 wounded. No casualties occurred on the Union side.

HAUPT, Hermann, brigadier-general of volunteers in the U. S. army, born in Pennsylvania about 1816, was graduated at West Point in 1835 and appointed brevet 2d lieutenant in the 3d infantry, but resigned his commission Sept. 30, 1835; was assistant engineer on the public works of the state of Pennsylvania from 1836 to 1839, and then became professor of mathematics in Pennsylvania college, which office he retained till 1847, when he became principal engineer of the Philadelphia and Columbia railroad, of which he was appointed superintendent two years later. Subsequently he was for several years the principal engineer of the works connected with the railway tunnel through the Hoosic mountain in Berkshire co., Mass. He was appointed a brigadier-general in Aug. 1862, to rank from April 27 preceding, and is charged with the general supervision of matters connected with transportation.

HAYS, Alexander, brigadier-general of volunteers in the U. S. army, born in Pennsylvania about 1825, was graduated at West Point in 1844 and appointed brevet 2d lieutenant in the 4th infantry, and 2d lieutenant in the 8th infantry in 1846; was brevetted 1st lieutenant for gallantry at Palo Alto and Resaca de la Palma; was acting assistant adjutant-general to Gen. Lane, and distinguished himself in several conflicts in Mexico under that commander; and resigned his commission April 12, 1848, and became an iron manufacturer at Venango, Penn. When the regular army was increased in 1861 he was appointed, May 14, a captain in the 16th infantry, became colonel of the 63d Pennsylvania volunteers, and was made brigadier-general in Sept. 1862.

HEBERT, Paul O., a general in the service of the confederate states, born in Louisiana, was graduated at West Point first in his class in 1840, and appointed 2d lieutenant of engineers. In 1841 and 1842 he was acting assistant professor of engineering at the military academy. He resigned in March, 1845, to become chief engineer of the state of Louisiana, which office he held until 1847. He then reentered the army as lieutenant-colonel of the 14th infantry, was brevetted colonel for gallantry at the battle of Molino del Rey, and commanded his regiment after his colonel was killed at Chapultepec. He was disbanded with his regiment in 1848. From 1854 to 1858 he was governor of Louisiana. When the civil war broke out he was appointed brigadier-general in the southern army.

HEFELE, Karl Joseph, a Roman Catholic theologian, born at Abtgmünd, Würtemberg, in 1809. He studied theology at the university of Tübingen, and was appointed lecturer there in 1835, and professor of church history in 1840. In 1842 he was elected a deputy to the second chamber of Würtemberg. His principal works are: *Geschichte der Einführung des Christenthums im südwestlichen Deutschland* (Tübingen, 1837); *Das Sendschreiben des Apostels Barnabas, übersetzt und erläutert* (1840); *Kritische Beleuchtung der Wessenbergschen Schrift über die grossen Kirchenversammlungen* (1841); *Cardinal Ximenes* (1844; translated into English by Dalton, London, 1860); and *Concilien-Geschichte* (5 vols., 1859 *et seq.*), his chief work. He has also edited the *Patres Apostolici* (1839).

HEINTZELMAN, Samuel P., major-general of volunteers in the U. S. army, born in Pennsylvania about 1807, was graduated at West

Point in 1826, and received a commission as 2d lieutenant in the 2d infantry; became 1st lieutenant March 4, 1833, assistant quartermaster July 7, 1838, and captain in the 2d infantry Nov. 4, 1838; was brevetted major for gallantry at Huamantla, Mexico, Oct. 9, 1847; became major in the 1st infantry, March 3, 1855; was brevetted lieutenant-colonel in May, 1861, for meritorious conduct in command of an Indian campaign in California in 1851; and was ordered to Washington as acting inspector-general of the troops collected there. He was commissioned colonel of the 17th infantry, May 14, 1861. He fought with great gallantry at the first battle of Bull run, where he was wounded; was then made a brigadier-general of volunteers, with rank from May 17, 1861; commanded a division in the army of the Potomac during the winter of 1861–'2; was appointed to command the 3d army corps in the division of that army into such corps in March, 1862; was brevetted brigadier-general in the regular army, May 31, 1862; took a prominent and effective part in the battles of the Chickahominy campaign; was made a major-general with rank from July 4, 1862; participated in the second battle of Bull run under Gen. Pope, Aug. 30, 1862, where his corps formed the right wing, which stood firm to the close of the fight; and after the retreat upon Washington was appointed to command the fortifications about that city, which post he held during McClellan's Maryland campaign.

HERRON, Francis J., brigadier-general of volunteers in the U. S. army, entered the service in 1861 as lieutenant-colonel of the 9th Iowa volunteers, served in Missouri under Gen. Curtis, fought at Pea ridge, and was appointed brigadier-general July 16, 1862. He especially distinguished himself in commanding at the battle of Prairie Grove, Ark., Dec. 7, 1862.

HETH, Henry, a general in the service of the confederate states, born in Virginia, was graduated at West Point in 1847 and appointed 2d lieutenant in the 6th infantry; became 1st lieutenant in June, 1853, adjutant in November, 1854, and captain in the 10th infantry in March, 1855. He resigned his commission April 25, 1861, and entered the service of Virginia. He is now (Dec. 1862) a brigadier-general in the confederate army.

HICKMAN, the capital of Fulton co., Ky., on the Mississippi river, 35 m. below Cairo; pop. in 1860, about 2,000. It is beautifully situated on the slope of a considerable hill, and is a defensive position of much natural strength. Gen. Fremont proposed to occupy it with a body of U. S. troops in Aug. 1861, but the project was not approved at Washington; and on Sept. 4 Gen. Polk placed a confederate garrison there, at the same time that he took possession of Columbus, 17 m. above. The two places were evacuated by the confederates, March 2, 1862, since which time the United States have maintained a strong garrison at Columbus, but Hickman has not been occupied.

HILL, Ambrose Powell, a general in the service of the confederate states, born in Virginia about 1828, was graduated at West Point in 1847 and appointed a brevet 2d lieutenant in the 1st artillery; became 2d lieutenant Aug. 26, 1847, 1st lieutenant in Sept. 1851, and assistant in the coast survey in Nov. 1855; resigned his commission March 1, 1861, entered the service of Virginia, and became colonel of the 3d regiment; commanded a brigade near Romney, June 19, 1861; was soon afterward made a brigadier-general in the confederate army; and in the campaign of the Chickahominy led the attack on the national forces at Mechanicsville, which began the seven days' fighting between that place and Harrison's Landing. In the advance of Lee into Maryland he commanded an army corps, and was present at the siege of Harper's Ferry, which was surrendered to him Sept. 15, 1862. His present rank is that of a major-general.

HILL, Daniel Harvey, a general in the service of the confederate states, born in South Carolina about 1824, was graduated at West Point in 1842 and appointed brevet 2d lieutenant in the 1st artillery; was transferred to the 3d artillery in 1843; became 2d lieutenant in the 4th artillery Oct. 13, 1845, and 1st lieutenant March 3, 1847; was brevetted captain for gallantry at Contreras and Churubusco, and major for gallantry at Chapultepec; resigned Feb. 28, 1849, was professor of mathematics successively in Washington college at Lexington, Va., and Davidson college, N. C., and in 1859 became principal of the military institute at Charlotte, N. C. He was chosen, May 8, 1861, colonel of the 1st North Carolina volunteers, commanded the confederates at the battle of Great Bethel, remained under Magruder at Yorktown, took part in the battles of the Chickahominy campaign, and led the attack on Gen. Casey at Fair Oaks. He has since been appointed to command the department of the Appomattox, having his head-quarters at Petersburg, Va., and now holds the rank of major-general. He is an elder in the Presbyterian church, and has published "Elements of Algebra," a volume on the "Sermon on the Mount," and one entitled "The Crucifixion of Christ." Having married a Miss Morrison of North Carolina, he is a brother-in-law of Gen. T. J. Jackson.

HINDMAN, Thomas C., a general in the service of the confederate states, born in Tennessee about 1818, served in Mexico as 2d lieutenant in the 2d regiment of Mississippi volunteers from Jan. 1847, to July, 1848, and was elected a representative in congress from the 1st district of Arkansas in 1859, where he was a consistent supporter of all the measures of the democratic party. He was a member of the national democratic convention held at Baltimore in 1860, by which Mr. Douglas was nominated for the presidency. After the outbreak of the civil war in 1861 he entered the confederate service, was appointed a brigadier-general, and in November served under Buckner in Kentucky. Subsequently he had command at Memphis, and, having been promoted to the rank of major-general, took charge of the forces of Arkansas, and claimed to command in the whole country west of the Mississippi. He was severely injured at the battle of Shiloh by the fall of his horse, which was shot under him. Having been charged with obtaining $1,000,000 from the banks of Memphis on pretended authority from Gen. Beauregard, and with having grossly exceeded his powers in various respects, the case was brought before the confederate house of representatives, Oct. 1, 1862, and finally Gen. Holmes was put in command in Arkansas, and Hindman was arrested. His disgrace did not continue long, however, for he commanded the confederates in the sanguinary battle of Prairie Grove, near Fayetteville, Ark., Dec. 7, 1862.

HOLLINS, George N., an officer in the navy of the confederate states, born in Baltimore, Md., Sept. 20, 1799. He entered the U. S. navy as midshipman in 1814, and after an unsuccessful attempt with the sloop of war Erie, Capt. Ridgely, to run the British blockade of the Chesapeake, was ordered with the rest of the officers and crew of the Erie to assist in the defence of the capital. He was on board the President, Commodore Decatur, when she was captured by the British, and remained a prisoner of war at Bermuda until the peace. He next served under Commodore Decatur against the Algerines, and distinguished himself by his gallantry in action. At the close of the war he took command of an East India merchantman, and afterward was employed in various duties in the navy, becoming lieutenant in 1825, and commander in 1841. He made himself conspicuous by the bombardment and destruction of the town of San Juan de Nicaragua, or Greytown, in 1852. On his return from that cruise he had command of the Sackett's Harbor navy yard for some time, and was then ordered to the Susquehanna, and sailed for Vera Cruz; but soon after arriving there he was ordered to join the Mediterranean squadron. In 1855 he was promoted to be captain. Returning to the United States in 1861, just after the secession of the southern states, he immediately resigned his commission; but the department refused to accept the resignation, struck his name from the rolls, and ordered his arrest. He escaped to the South, entered the confederate navy, received a commission as commodore, and on Oct. 11, with the iron-clad ram and gunboat Manassas, and a fleet of vessels, attacked the federal blockading squadron at the passes of the Mississippi, doing slight damage, and claiming an important victory. For this achievement he received the next day the appointment of flag captain of the New Orleans naval station. His efforts to oppose the advance of the Union fleet against that city in April, 1862, proved futile, many of his vessels being destroyed.

HOLMES, Theophilus Hunter, a general in the service of the confederate states, born in North Carolina, was graduated at West Point in 1829 and appointed 2d lieutenant in the 7th infantry; became 1st lieutenant March 26, 1835, and captain Dec. 9, 1838; was brevetted major for gallantry at Monterey, Sept. 23, 1846, and became major of the 8th infantry, March 3, 1855. He served several years in Missouri, New Mexico, and Texas, and in 1858 commanded at Fort Bliss in the last named state. In 1860 he was transferred to Fort Columbus, in New York harbor, in charge of the general recruiting service. On the outbreak of the secession troubles in the latter part of 1860 he obtained leave of absence and went to North Carolina, where he had large possessions both in land and negroes; he resigned his commission April 28, 1861, and entered the confederate army. On Nov. 13, 1861, he was appointed to command the army of Aquia, which coöperated with the army at Manassas. In Nov. 1862, he was serving west of the Mississippi, having command in Arkansas. He now (Dec. 1862) holds the rank of lieutenant-general.

HOLT, Joseph, an American statesman, born in Breckenridge co., Ky., in 1807. He was educated at St. Joseph's college, Bardstown, and at Centre college, Danville, and in 1828 commenced the practice of the law in Elizabethtown, Ky. Thence he removed in 1832 to Louisville, and in the succeeding year was appointed commonwealth's attorney for the Jefferson circuit, which included the city of Louisville. In 1835 he removed to Port Gibson, Miss., and after practising his profession there with great success, returned in 1842 to Louisville. Upon the accession of Mr. Buchanan to the presidency he was appointed commissioner of patents, and took up his residence in Washington; and in 1859 he succeeded to the office of postmaster-general, made vacant by the death of Aaron V. Brown. After the withdrawal of John B. Floyd from the cabinet in Dec. 1860, he assumed the charge of the war department, and by his energy and approved loyalty to the government did much to restore the public confidence, already shaken by the defection of Secretaries Floyd and Thompson and other prominent officials. To the precautions taken by Mr. Holt in coöperation with Gen. Scott has been attributed the absence of any revolutionary demonstrations in Washington during the inauguration of President Lincoln. He retired from office early in March, and during the ensuing spring and summer was actively employed in advocating the Union cause in Kentucky and elsewhere, denouncing with particular emphasis the policy of "neutrality," which certain of the border states seemed inclined to adopt. In a letter dated May 31, 1861, to J. F. Speed of Kentucky, on the duty of that state in the existing civil war, and which was printed and widely circulated, he declared that "the expenditure of not merely hundreds of millions, but of billions of treasure, would be well made, if the result would be the preservation of our institutions." After the removal of Gen. Fremont from the command of the military department of the West, Mr. Holt was appointed one of a committee of 3 to examine and decide upon claims brought against that department prior to Oct. 14, 1861, in which duty he was occupied until March, 1862, when the committee made its report. In the succeeding September he was appointed judge advocate general of the army. Mr. Holt, though in politics a Douglas democrat, has supported Mr. Lincoln's administration throughout, and expressed his emphatic approval of the emancipation proclamation of Sept. 22, 1862.

HOOD, John B., a general in the service of the confederate states, born in Kentucky, was graduated at West Point in 1853, and appointed brevet 2d lieutenant in the 4th infantry. In 1855 he was transferred to the 2d cavalry, with a detachment of which he had a gallant conflict with a body of Comanche and Lipan Indians near the head of the San Pedro river, Texas, in July, 1857. In this affair he was wounded. The next year he was promoted to be 1st lieutenant. He resigned his commission in April, 1861, and was appointed a brigadier-general in the southern army.

HOOKER, Joseph, major-general of volunteers and brigadier-general in the regular army of the United States, born in Hadley, Mass., in 1819. He entered West Point in 1833, and was graduated in 1837, receiving a 2d lieutenancy in the 1st artillery. At the commencement of the Mexican war he was appointed aide-de-camp to Brig. Gen. Hamer, was brevetted captain for gallantry at Monterey, obtained the post of assistant adjutant-general with the rank of captain in March, 1847, and received the brevet ranks of major and lieutenant-colonel for distinguished conduct at the National bridge and Chapultepec. In Oct. 1848, he became full captain, and relinquished his rank in the line. Resigning his commission in 1853, he settled on a farm in California, where he was still residing in 1861. Appointed brigadier-general of volunteers, May 17, 1861, he was assigned a brigade in the army of the Potomac, and afterward promoted to the command of a division in Heintzelman's corps. From July, 1861, to Feb. 1862, he was stationed in southern Maryland on the north bank of the Potomac. In the subsequent battles on the Yorktown peninsula his troops were popularly known as "fighting Joe Hooker's division." He was appointed major-general of volunteers July 4, 1862, and assigned to the command of the 1st army corps in September. He bore a distinguished part in the second battle of Bull run, where he had command of all the forces in and around Fairfax, and at the battle of Antietam commanded the right wing of the federal army, winning the highest commendation from Gen. McClellan. He was wounded in the foot in this engagement and disabled from duty for several weeks. On Sept. 21 he was appointed brigadier-general in the regular army. In November he superseded Gen. Porter in command of the 5th corps, and shortly afterward was assigned the centre grand division of the army of the Potomac, comprising the 3d and 5th corps.

HOVEY, Alvin P., brigadier-general of volunteers in the U. S. army, entered the service in 1861 as major of the 24th Indiana volunteers, served under Gen. Pope in the army of the Mississippi, became colonel of a regiment, was made brigadier-general of volunteers April 28, 1862, took part in the operations against Corinth, was with his brigade at Memphis, and is now in the army under command of Gen. Grant.

HOVEY, Charles Edward, brigadier-general of volunteers in the U. S. army, born in Hartford, Vt., April 26, 1827. He entered Dartmouth college in 1848, and after graduating took charge of the high school at Framingham, Mass., where he remained two years. He then became principal of a school at Peoria, Ill., interested himself in the public school system of that place, and on the establishment of a high school was chosen principal, and at the same time superintendent of the city schools. In 1855 he was elected president of the teachers' association of Illinois, and in the same year became editor of the "Illinois Teacher." When the state normal university was founded at Bloomington he was chosen its president, an office which he filled until 1861, when he raised and became colonel of the 33d Illinois volunteers. This regiment, sometimes called the "schoolmasters'" or "normal regiment," was intended to be composed entirely of teachers, graduates, and students of the state normal and other schools, but the plan was not fully carried out. Col. Hovey distinguished himself at the battle of Bayou Cache, Ark., July 7, 1862, and for his gallantry on that occasion was nominated brigadier-general of volunteers, and assigned a command in Gen. Steele's division of the army of Arkansas. Toward the end of November he moved from Helena, Ark., with a force of 8,000 men, and destroyed portions of the Mississippi central and Mississippi and Tennessee railroads, near Grenada, Miss.

HOWARD, Oliver Otis, brigadier-general of volunteers in the U. S. army, born in Leeds, Me., Nov. 8, 1830. He was graduated at Bowdoin college in 1850, and at West Point in 1854, was appointed brevet 2d lieutenant of ordnance, became 1st lieutenant and instructor of mathematics at West Point in 1857, and resigned his commission in June, 1861, to take command of the 3d Maine volunteers. He commanded a brigade at the first battle of Bull run, and for his gallant conduct in that battle was appointed brigadier-general of volunteers, Sept. 3, 1861. He was assigned a brigade in the army of the Potomac, and in the battle of Fair Oaks, June 1, 1862, had his right arm shot off. After the battle of Antietam he took Gen. Sedgwick's division in Sumner's (now Couch's) 2d army corps.

HOWE, Albion Parris, brigadier-general of volunteers in the U. S. army, born in Standish, Me., March 13, 1818. He was graduated at West Point in 1841, and assigned to the 4th artillery. From 1843 to 1846 he was instructor in mathematics at the military academy. He served with credit in the Mexican war, was brevetted captain for gallant conduct in the battles of Contreras and Churubusco, became captain in 1855, was Gen. McClellan's chief of artillery in western Virginia, and commanded a brigade in the army of the Potomac during the Yorktown campaign. He was commissioned brigadier-general of volunteers April 14, 1862, and assigned to the command of a brigade in Couch's division of the 4th (Keyes's) army corps.

HUGER, Benjamin, a general in the service of the confederate states, born in Charleston, S. C., in 1806, was graduated at West Point in 1825 and appointed 2d lieutenant in the 3d artillery; became captain of ordnance May 30, 1832, and chief of ordnance to Gen. Scott's army in Mexico in 1847–'8; was brevetted major for gallantry at Vera Cruz, lieutenant-colonel for gallantry at Molino del Rey, and colonel for gallantry at Chapultepec; and became major Feb. 15, 1855. For several years he had command of the arsenal at Pikesville, Md., and held that post when South Carolina declared her secession from the Union. His immediate resignation had been counted on by people in his native state; but though the seceders made him brilliant offers, he adhered to the government of the United States. Nevertheless, after the conflict at Fort Sumter, he finally sent in his resignation, April 22, 1861, and was at once made a brigadier-general in the confederate service. He was employed at Richmond and that vicinity, and commanded with the rank of major-general at Norfolk just previous to its occupation by the federal forces, May 10, 1862. For his failure to hold that place the confederate authorities punished him by his retirement from active service.

HUGHES, Thomas, an English author, born in Berkshire, Oct. 20, 1823. He is a son of Mr. John Hughes, author of the "Itinerary of Provence," and editor of the "Boscobel Tracts." He was educated at Rugby under Dr. Arnold, and at Oriel college, Oxford, where he was graduated B.A. in 1845. He afterward entered himself a student of Lincoln's Inn, and was called to the bar in 1848. His first book, "Tom Brown's School Days, by an Old Boy" (1857), gave an excellent and affectionate account of Rugby school under Dr. Arnold, and acquired a remarkable popularity. It was followed by "The Scouring of the White Horse, or the Long Vacation Ramble of a London Clerk" (1858), and "Tom Brown at Oxford" (1861).

HUMPHREYS, Andrew A., brigadier-general of volunteers in the U. S. army, born in Pennsylvania about 1812, was graduated at West Point in 1831 and appointed brevet 2d lieutenant in the 2d artillery, and served as acting assistant professor of engineering at West Point until April, 1832; distinguished himself in conflict with the Indians in Florida, June 9, became 1st lieutenant in August, and resigned Sept. 30, 1836; was appointed 1st lieutenant in the topographical engineers, July 8, 1838; was employed as an assistant in the coast survey from 1845 to 1849; became captain in May, 1848; and in Aug. 1853, took charge of the office of explorations and surveys in the war department. He was promoted to the rank of major, Aug. 6, 1861, was attached to the staff of Gen. McClellan as an additional aide-de-camp, March 5, 1862, and was made a brigadier-general of volunteers, April 28.

HUNT, Henry Jackson, brigadier-general of volunteers in the U. S. army, born in Ohio about 1821, was graduated at West Point in 1839 and appointed 2d lieutenant in the 2d artillery, and became 1st lieutenant June 18, 1846; was brevetted captain for gallantry at Contreras and Churusbusco, Aug. 20, and major for gallantry at Chapultepec, Sept. 13, 1847; distinguished himself in the assault on Molino del Rey, where he was wounded; became captain Sept. 2, 1852, major of the 5th artillery May 14, 1861, aide-de-camp to Gen. McClellan, with the rank of colonel, Sept. 28, 1861, and brigadier-general of volunteers in Sept. 1862. He commands (Dec. 1862) a brigade in Sturgis's division of the 9th army corps in the army of the Potomac.

HUNTER, David, major-general of volunteers in the U. S. army, born in Washington, D. C., July 21, 1802. His father, who was a chaplain in the army, was a native of Virginia. He was graduated at West Point in 1822 and appointed 2d lieutenant in the 5th infantry, and became 1st lieutenant in 1828, and captain in the 1st dragoons in 1833. He twice crossed the plains to the Rocky mountains. In 1836 he resigned and engaged in the forwarding business at Chicago, but he rejoined the army as paymaster in 1841, and held that office with the rank of major in 1861. He accompanied President Lincoln from Springfield, Ill., *en route* for Washington, as far as Buffalo, N. Y., where, in the pressure of the crowd, he suffered a dislocation of the collar bone. On May 14 he was appointed colonel of the 6th regiment U. S. cavalry, and at the first battle of Bull run commanded the main column of McDowell's army, and was severely wounded in the neck. On Aug. 13 he was made a major-general of volunteers, served under Maj. Gen. Fremont in the department of Missouri, and superseded him in command, Nov. 2. Gen. Hunter afterward, upon being relieved by Gen. Halleck, had command of the department of Kansas, with his head-quarters at Fort Leavenworth, which he retained until March, 1862, when he was ordered to South Carolina, assuming command of the department of the South, and established his headquarters at Hilton Head, Port Royal, S. C. On May 9 he issued a proclamation declaring that whereas the states of Georgia, Florida, and

South Carolina, composing his department, were under martial law, slavery, being incompatible with a state of martial law in a free country, was hereby abolished. This proclamation was annulled by the president on the 19th of the same month. Early in September Gen. Hunter was ordered to Washington, and appointed president of a court of inquiry to investigate the conduct of several officers, and subsequently the surrender of Harper's Ferry, and matters connected with the late battles in Maryland.

HURLBUT, Stephen Augustus, major-general of volunteers in the U. S. army, born in Charleston, S. C., March 24, 1815. He studied law and practised in his native city until the breaking out of the Florida war, when he enlisted in a South Carolina regiment, and was elected adjutant. In 1845 he removed to Illinois, and opened an office at Belvidere, Boone co., which is still his place of residence. He was a member of the constitutional convention of Illinois in 1847, and has several times represented Boone county in the state legislature. He was appointed a brigadier-general of volunteers in May, 1861, and after the capture of Fort Donelson was in command of that post. When Gen. Grant's army moved up the Tennessee river, he was placed in command of the 4th division, and with his troops was the first to reach Pittsburg Landing. He took part in the battle of Shiloh, afterward was stationed at Memphis, and early in Sept. 1862, was ordered to Bolivar, Tenn. After the battle of Corinth, in Oct. 1862, he pursued and engaged the defeated confederates, and for his services was promoted to be major-general, Sept. 17.

HURTER, Friedrich Emanuel, a German historian, born in Schaffhausen, Switzerland, March 19, 1787. He studied theology at Göttingen, and in 1825 became pastor of a Protestant church in Schaffhausen. His first publication, *Geschichte des Papstes Innocenz III. und seines Zeitgenossen* (4 vols., 1834–'42), gave evidence of a feeling of deep reverence for the ecclesiastical establishments of the middle ages, which excited the sympathy of the Roman Catholics, and induced his colleagues in Schaffhausen to request him to define his position in the Reformed church. His defence having given rise to an acrimonious controversy, he resigned his office in 1841, and in 1844 was formally received into the communion of the church of Rome. In the same year he was appointed historian to the imperial court in Vienna, but lost his office in 1849 in consequence of his supposed connection with persons of liberal political views. He was, however, permitted to remain in Vienna, and in 1852 was restored to his office and ennobled. His works include *Antistes Hurter und seine sogenannten Amtsbrüder* (1840), which immediately preceded the resignation of his pastorate in Schaffhausen; *Die Befeindung der katholischen Kirche in der Schweiz* (1840); *Geburt und Wiedergeburt* (3 vols., 1845), which relates the circumstances attending his conversion to Catholicism; *Geschichte des Kaisers Ferdinand II.* (4 vols., 1850); *Philipp Lang, Kammerdiener Rudolfs II.* (1851), and others.

I

INGALLS, Rufus, brigadier-general of volunteers in the U. S. army, born in Denmark, Oxford co., Me., Aug. 23, 1820. He was graduated at West Point in 1843, brevetted 2d lieutenant of rifles, and ordered to the Texas frontier. In 1845 he was appointed 2d lieutenant in the 1st dragoons, and in 1846 was ordered to New Mexico, where he distinguished himself in the battles of Embudo and Taos (1847), and was soon afterward promoted to be 1st lieutenant, to date from those engagements. In 1848 he was appointed captain in the quartermaster's department. He served for some years in California and Oregon, was attached to Col. Steptoe's expedition across the continent, and from 1856 to 1860 was stationed at Fort Vancouver, being on the staff of Gen. Harney at the time of the San Juan affair. In April, 1861, he was sent with Col. Brown to reënforce Fort Pickens, and in July was ordered to duty with the army of the Potomac. He was appointed aide-de-camp to Gen. McClellan with the rank of lieutenant-colonel in September, major in the quartermaster's department in Jan. 1862, and chief quartermaster of the army of the Potomac in August. This last appointment he still holds (Dec. 1862). He was nominated brigadier-general of volunteers in Sept. 1862.

ISLAND NUMBER TEN, a partially wooded island in the Mississippi river, between Hickman, Ky., and New Madrid, Mo., about 70 m. S. from Cairo. The river, whose general course is S., here makes a sharp bend, running N. W. for about 12 m., when it turns and runs in a S. E. direction. In this second bend, on the Missouri side, is situated New Madrid, the distance from which place across the peninsula thus formed to the river is 6 m., while by the river it is 15. Opposite New Madrid is a peninsula almost precisely similar to that above described, and from Island No. Ten, on the N. side of its base, to Tiptonville, situated on its S. side, the distance by land is about 5 m. and by water 27. The island is about 1 m. in length by ¼ m. in width, has a level surface lying above high water mark, and is rapidly wearing away at its head under the effect of the current of the river. For some time before the occupation of Columbus the confederates had begun to fortify the island, which, on account of the nature of the surrounding country on both sides of the Mississippi, cannot be effectively assailed by a force operating from above. The shores of the island were lined with earthworks so disposed that each one commanded the one above; and on the neighboring mainland of Tennessee, between which and the island the deeper channel of the river passes, were a series of supporting earthworks mounted with many heavy cannon. To these defences important additions were constantly making, until what was originally a strong position became almost impregnable against an attack from gunboats. On March 15, 1862, the flotilla of Flag Officer Foote, comprising several gunboats and a portion of the mortar fleet, dropped down to Island No. Ten from Hickman, about 20 m. above, and on the succeeding day the bombardment of the place was commenced. The garrison, including the troops stationed on the mainland, numbered between 7,000 and 8,000 men, under Gen. W. W. Mackall, drawn principally from the abandoned fortifications at Columbus and Hickman. For several days the fire from the mortar boats continued without intermission, with apparently little effect upon the enemy's batteries; and on the 20th Flag Officer Foote telegraphed to the secretary of the navy that the place was harder to take than Columbus, and that, although he was gradually approaching the island, he did not hope for much "until the occurrence of certain events which promised success." Of these "events" the most important was the cutting a passage through the inundated forest on the base of the peninsula, opposite Island No. Ten, to New Madrid, which on the 14th had fallen into the hands of Gen. Pope. The overflowed condition of the swamps and shores on the Missouri side of the river precluded any coöperation by the land force with the fleet in that quarter, but by conveying transports through this passage to New Madrid, Pope's troops could cross the river and assail the enemy's batteries near the island in the rear. The idea of this passage was first suggested by Gen. Schuyler Hamilton, and on the 17th the work was vigorously commenced by the engineer regiment of Col. J. W. Bissell. In 19 days an avenue 50 feet wide and 12 m. long was cut across the peninsula, about half the distance being through a dense forest, the trees of which had to be sawed off 4½ feet under water. During all this time the flotilla had kept up its fire upon the batteries on the island, but without making any progress toward their reduction; and the confederates, anticipating a movement in their rear, had erected additional batteries in every place where troops could be landed on the Tennessee side of the river. On the night of April 3 the gunboat Carondelet succeeded in running past the batteries on the island, and reached New Madrid uninjured, though many shots were fired at her; and during the 6th she explored the river for 15 m. below that place in the midst of a heavy fire. On the night of the 6th the gunboat Pittsburg also ran the blockade, and during the morning of the 7th was employed in conjunction with the Carondelet in silencing a battery near Watson's Landing, which had been selected by Pope as a place for disembarking his troops. This having been accomplished at noon, a number of steamboats and barges, previously floated through the canal from the upper part of the river, put out from New Madrid with a division of troops under Gen. Paine, and arrived in safety on the Tennessee shore. This movement convinced the confederates of the impossibily of holding Island No. Ten, and they immediately began to abandon their positions along the shore and move toward Tiptonville. Paine pushed forward to cut them off, other national troops following as fast as they were landed, and the confederates, driven into an impassable swamp with no hope of succor or escape, were compelled early on the morning of the 8th to surrender at discretion; but a few escaped by wading and swimming through the swamps. Meanwhile, on the night of the 7th the garrison on the island, finding itself deserted and in danger of an attack in the rear, sent a message to Flag Officer Foote surrendering to him. On the morning of the 8th possession was taken of the works on the island and the main shores, where were found 123 pieces of heavy artillery, 7,000 stand of small arms, and an immense quantity of ammunition of all kinds. The number of prisoners who surrendered to the land and naval forces amounted to nearly 7,000, including 3 generals and nearly 300 field and company officers. Four steamers were also captured afloat, beside several sunk near the Tennessee shore, and which were afterward recovered. No casualties attended the Union army in this operation.

IUKA. See Corinth.

IVERSON, Alfred, a general in the service of the confederate states, born in Burke co., Ga., Dec. 3, 1798, was graduated at Princeton college in 1820, studied law, and settled at Columbus, Ga., in the practice of that profession; was a member of both houses of the state legislature; was twice elected judge of the superior court; was an elector at large in the presidential election of 1844, and voted for Mr. Polk; was a representative in the 30th congress, serving from 1847 till March 4, 1849; was elected as a democrat to succeed the Hon. W. C. Dawson as U. S. senator from Georgia, his term of office extending from March 4, 1855, to March 4, 1861; was known in the senate as an advocate of disunion and an independent southern confederacy, and withdrew from the senate Jan. 28, 1861, giving as his reason the secession of Georgia, and saying that it was for the remaining states to choose peace or war, but that the first gun fired would destroy for ever all hope of reconstruction. After the outbreak of positive hostilities he entered the confederate army, became colonel of a Georgia regiment, and in Nov. 1862, was promoted to be a brigadier-general. He is married to a daughter of the late Hon. John Forsyth, secretary of state under Presidents Jackson and Van Buren.

IVES, Eli, an American physician, born in New Haven, Conn., Feb. 7, 1779, died there, Oct. 8, 1861. He was graduated at Yale college in 1799, and was rector of the Hopkins grammar school for the next two years, studying medicine in the mean time. In 1801 he commenced the practice of medicine with his father. He subsequently continued his studies in Philadelphia, and devoted much attention to the materia medica, especially to indigenous vegetable remedies. He was associated with Prof. Silliman in the establishment of the medical department of Yale college, and on its organization was appointed professor of materia medica. In 1829 he was transferred to the chair of the theory and practice of medicine, which he held till 1852, when he resigned on account of his advanced age, but on one or two occasions he resumed the chair for a year. He was president for several years of the state medical society and the national medical association.

J

JACKSON, Conrad Feger, brigadier-general of volunteers in the U. S. army, born in Pennsylvania, killed in the battle of Fredericsburg, Va., Dec. 13, 1862. He became colonel of the 9th Pennsylvania reserves in 1861, commanded his regiment at the battle of Dranesville, and served under Gen. McCall in the Chickahominy campaign. He was commissioned brigadier-general July 17, 1862, and took command of the brigade previously under Gen. Ord in McCall's division.

JACKSON, James S., brigadier-general of volunteers in the U. S. army, born in Kentucky about 1822, killed in the battle of Perryville, Oct. 8, 1862. He was graduated at Centre college, studied law, and practised that profession at Greenupsburg, Greenup co., and afterward at Hopkinsville, Christian co., Ky. He served in the Kentucky cavalry in the Mexican war, at the close of which he was a 1st lieutenant. Elected as a Union candidate a representative in the 37th congress, he took his seat in the extra session, July 4, 1861; but as soon as the war had been opened in his native state he became colonel of the 3d Kentucky cavalry, was appointed a brigadier-general of volunteers, July 10, 1862, and commanded a division under Gen. McCook. He was a man of earnestness and sometimes of violence of character, a brave and patriotic soldier. In the course of his life he was involved in several duels, one of them with Mr. T. F. Marshall. In a street fight in Hopkinsville he killed his antagonist.

JACKSON, Nathaniel J., brigadier-general of volunteers in the U. S. army, entered the service in June, 1861, as colonel of the 1st regiment Maine volunteers, composed of 3 months' troops, and at the close of their term of service returned to the field as colonel of the 5th Maine volunteers. He was appointed brigadier-general in the autumn of 1862.

JACKSON, Thomas Jefferson, a general in the service of the confederate states, born in Lewis co., Va., in 1826. Left an orphan at an early age, he was enabled by a friend to enter West Point, where he was graduated in 1846 and appointed brevet 2d lieutenant in the 2d artillery, and served in Mexico with Magruder's battery; became 1st lieutenant Aug. 20, 1847; was brevetted captain for gallantry at Contreras and Churubusco, and major for gallantry at Chapultepec; resigned Feb. 29, 1852, from impaired health, and became a professor in the military institute at Lexington, Va., where he married as his first wife a daughter of the Rev. Dr. Junkin, president of Washington college of that place; his second wife is a daughter of the Rev. Dr. Morrison, of Charlotte, N. C. On the outbreak of the civil war, Jackson, who is an elder in the Presbyterian church, spent a day and a night in endeavoring to convert Dr. Junkin to secession views, the two arguing together during a whole day, and praying together during the night following, without effect however upon Dr. Junkin, who was afterward obliged to leave the country and seek refuge in the northern states. Jackson was appointed a colonel in the army of Virginia, advanced upon Harper's Ferry, and occupied it April 18, 1861. On July 2 he was attacked at Martinsburg by the national forces under Gen. Patterson, and compelled to retreat. Made a brigadier-general in the confederate army, he took part in the battle of Bull run, and during the winter of 1861-'2 remained with the main body of the confederates at Centreville. While Gen. McClellan was removing his army to the peninsula of Yorktown and entering upon the campaign of the Chickahominy, Jackson remained beyond Winchester with a considerable force, and fought near that place a battle with the troops under Gen. Shields on March 23, in which he was repulsed. From the circumstance that in this conflict a considerable part of his men were stationed behind a stone wall he is supposed to have derived his popular appellation of "Stonewall" Jackson. He now slowly retreated before the force under Gen. Banks until it had been greatly reduced in order to strengthen the corps of Gen. McDowell (then under orders to advance toward Richmond along the Richmond and Potomac railroad), and in its turn obliged to retreat. Jackson then, rapidly pushing northward at the head of 20,000 men, cut off a detached body of Banks's troops at Front Royal, and compelled him to a speedy retreat to Williamsport, Md. Fremont and McDowell now moved, the one from west of the mountains, and the other from the east, to cut him off, but he succeeded in withdrawing before they could intercept him. Fremont, however, overtook his rear guard and defeated it in the battle of Cross Keys, June 8; but Jackson moving with rapidity took revenge on Shields, a part of whose division he encountered and repulsed at Port Republic on the 9th. Having thus nullified the intended movement of McDowell, and also caused Fremont to retire before him, he now hastened back to Richmond, where he arrived in season to take part in the series of battles which relieved that city and closed the campaign of the Chickahominy; after which he led the advance of Gen. Lee's army as it moved north against Pope, fought him repeatedly, defeated him, and crossed the Potomac into Maryland. Having occupied Frederic, he moved westward, recrossed the river, surrounded and captured Harper's Ferry, taking upward of 11,000 Union prisoners, Sept. 15, again crossed into Maryland, and, joining Lee's main body, bore a prominent part in the battle of Antietam, the scene of which he reached on the 17th. He has been promoted to the rank of lieutenant-general.

JACKSON, Thomas K., a general in the service of the confederate states, born in South Carolina about 1829, was graduated at West Point in 1848 and appointed brevet 2d lieutenant in the 5th infantry; became 2d lieutenant in the 8th infantry Jan. 22, 1849, and 1st lieutenant in March, 1855; distinguished himself in conflicts with the Apaches in New Mexico, June 27, 1857; resigned his commission April 1, 1861, and is now a brigadier-general in the confederate army.

JAMES ISLAND, an island on the coast of South Carolina, immediately S. of the city of Charleston, and separated on its W. side from the mainland by Stono inlet. An attack on Charleston from this direction having been determined upon by Gen. Hunter, commanding the U. S. forces in the department of the South, a fleet of gunboats entered Stono inlet in the latter part of May, 1862, and on June 4 a body of troops was landed on the island. The confederates, in anticipation of an attempt upon the city, had constructed some formidable earthworks in a commanding position at Secessionville, a small place on the E. side of the island, which was a favorite summer resort of the people of Charleston. The Union troops intrenched themselves near their landing place, and awaited the arrival of reënforcements, several reconnoissances having shown that the enemy were in large force in front. While thus situated they were greatly annoyed by the fire from the "Tower" battery at Secessionville, the largest of the enemy's redoubts; and with a view of gaining possession of this work and extending his approaches toward Charleston, Gen. Benham, who by the return of Gen. Hunter to Hilton Head became chief in command, determined on a reconnoissance in force toward Secessionville. At dawn of the 16th about 6,000 men in 3 brigades marched to that place with orders to carry the battery by assault, and if possible with the bayonet alone. Two of the brigades, under the command of Gen. I. I. Stevens, advanced across an open field to within 400 yards of the Tower battery, when they separated and marched by columns of regiments against each side of the work, which was protected in front by abatis and on the sides by lines of rifle pits. In the face of a devastating fire from artillery and riflemen the assaulting columns pressed steadily on, and the storming party, composed of two companies of the Michigan 8th, with a few of the New York 79th (highlanders), succeeded in breaking through the abatis and mounting the parapet. So destructive was the enemy's fire, however, that the men were recalled and formed again behind the shelter of a hedge, 500 yards from the fort. While awaiting the command to advance again, Stevens learned that the brigade of Col. Williams, which was operating against the battery in another direction, and was separated from the main attacking column by an impassable marsh, had been compelled to retire in order to avoid the shells from the Union gunboats, which were attempting to support the attack. A general retreat was accordingly ordered, and the troops regained their camp with the loss of 668 men in killed, wounded, and missing. No further attempt was made upon the battery, and the invading forces soon after returned to Hilton Head. Gen. Benham was subsequently sent to the North under arrest by Gen. Hunter, for an alleged disobedience of orders in making the attack.

JAMESON, Charles Davis, brigadier-general of volunteers in the U. S. army, born in Gorham, Me., Feb. 24, 1827, died at Oldtown, Me., Nov. 6, 1862. He received a good academic education, and afterward engaged in lumbering on the Penobscot. He was a delegate in 1860 to the Charleston convention, in which he supported the nomination of Mr. Douglas for the presidency, and in 1861 and 1862 was the candidate of the "war democrats" for the office of governor of Maine. In May, 1861, he was apppointed colonel of the 2d Maine volunteers, and distinguished himself at Bull run, for which he was promoted to be brigadier-general, Sept. 3, 1861. He commanded a brigade under Gen. Heintzelman in the army of the Potomac, and distinguished himself at Williamsburg and Fair Oaks. He died of camp fever contracted on the peninsula.

JOHN of Austria, don, a Spanish general, natural son of the emperor Charles V., born in Ratisbon, Feb. 24, 1545 (or more probably, as Prescott thinks, in 1547), died near Namur, Oct. 1, 1578. His mother was Barbara Blomberg, originally a washerwoman, according to Motley, and a fearful termagant, who was afterward married to a German officer, became a widow, and, being established in great state at Ghent under the charge of the duke of Alva, gave him and his master Philip II. almost as much trouble as the turbulent provinces themselves, until she was with great difficulty induced to retire to Spain. She at one time declared in a fit of passion that Don John was not the emperor's son, so that there still remains some doubt as to his origin, though Charles himself never entertained any. The child, at first called Geronimo, was carried to Spain and brought up with great care by the emperor's major domo, Don Luis Quixada; but his parentage was concealed till after Charles's death in 1558, when a private letter to his son and successor Philip II. was found, acknowledging him, and desiring him to be treated with all the honor and consideration due to his son. On his return from Flanders in 1559, Philip disclosed to Geronimo the secret of his birth, changed his name, gave him a splendid establishment at Madrid, and sent him to Alcala to be educated with his nephews, nearly of his own age, the infante Don Carlos and the afterward celebrated Alexander Farnese. He was distinguished for beauty and for martial tastes and accomplishments; and in 1565 he departed secretly for Barcelona to take part in the defence of Malta, but was compelled to return by command of the king, who considered him too young for so desperate a strife. Philip, indeed, manifested for him the tenderest affection, and his countrymen, says Prescott, came in time to regard him with feelings little short of idolatry. In June, 1568, Don John sailed in command of an expedition against the Barbary corsairs, with the celebrated Requesens as lieutenant, and returned triumphant at the end of 8 months. In the same year the great insurrection of the Moriscoes of Granada had broken out, and Don John was now sent thither as nominal commander-in-chief, but hampered by a council to whose will he was obliged to defer. His first independent exploit was the capture of Galera, which fell Feb. 6, 1570, after immense losses on both sides, and all the inhabitants except a few women and children were by his order put to the sword, and the place was razed to the ground and sown with salt. Other successes followed rapidly until the final expulsion of the Moriscoes from Granada, in which Don John had but a subordinate share. In 1571 he was placed in command of the immense armament organized by the holy league against the Turks, which won the famous naval victory of Lepanto, Oct. 7. (See LEPANTO.) Although this success was not followed up, owing to the dissensions of the chiefs, and subsequently to the avoidance of battle by the Turks, all Europe rang with the praise of the young hero, and his ambition rose with his glory. In Sept. 1574, he made a descent on the Barbary coast, and captured Tunis, the fortifications of which he repaired and strengthened, although ordered by Philip to destroy them, and conceived the project of establishing a throne for himself on the ruins of Carthage. The pope favored the scheme, but the king thwarted it, and the next year Tunis was recaptured by the Turks. He then turned his attention northward, and, promised all the aid in the power of the pope, boldly dreamed of liberating and marrying the captive Mary, queen of Scots, and reigning with her over all Britain, Elizabeth being dethroned. Opportunely, as it seemed, for this wild plan, he was appointed governor-general of the Netherlands, and, disguised as a Moorish slave to one of his attendants, travelled secretly through France, and entered Luxemburg Nov. 3, 1576, the very day of the terrible massacre and pillage by the Spanish soldiery known as the "fury of Antwerp." Don John came with the contradictory instructions to conciliate the provinces, but concede nothing; but before he could procure his recognition as governor, he found himself obliged to sign the treaty called, after its ratification by Philip, the perpetual edict, and to send away the hated Spanish soldiers, on whom he had relied for carrying out his personal designs upon England. The edict ostensibly confirmed the "pacification of Ghent," concluded between the provinces just before his arrival, for the purpose of securing religious toleration; but William of Nassau, and the provinces of Holland and Zealand under his guidance, perceiving the duplicity of its stipulations, and the governor's insincerity, refused to accept it. Don John, for his own purposes, was sincerely desirous of establishing peace, but at the same time determined to maintain the royal supremacy and suppress heresy; and the long and harassing negotiations carried on with these irreconcilable aims, during which he made to no purpose unbounded offers of wealth and power to the prince of Orange, chafed his fiery spirit and embittered his hatred of the Netherlanders. At length he threw down the gauntlet by seizing by a discreditable stratagem the castle of Namur, held for the states by a feeble garrison, but of which he had the right as governor to take peaceable possession, and recalling in small bodies and at intervals the troops he had sent to Lombardy, while in spite of the treaty he had all the time retained a numerous German force. Meantime the archduke Matthias of Austria, called in by a faction of nobles, had been nominally accepted by the states-general as governor of the Netherlands, while the real power was placed in the hands of William of Nassau (thus thwarting the primary object of the faction); and on Dec. 7, 1577, Don John was formally deposed, and denounced as an infractor of the peace which he had sworn to maintain. The states had by great exertions raised a force equal to his own, but led by lukewarm nobles, which assembled near Namur, and then retired to seek a stronger position. The governor followed with his army, and his vanguard came up with them near Gembloux, Jan. 2, 1578. There, while they were struggling irregularly through a marsh, Alexander Farnese with a small body of cavalry attacked them by surprise, and almost annihilated them, many thousands being slain, all their equipments captured, and many prisoners carried off and put to death in a variety of barbarous modes; while on the Spanish side scarcely a man was lost or a wound received. This stunning blow, however, Don John could not effectively follow up from want of resources, though he possessed himself of many towns. All through his administration he had received abundant promises, but very little substantial aid, from Philip II., who, by the intrigues of his minister Perez, had been led to suspect him of designs upon the throne; and he was forced to remain idly in his intrenched camp a league from Namur, while the provinces, more united than ever, were again gathering head under the exertions of William, and the duke of Alençon, with different designs, was threatening him with a French force from another quarter. Moreover, his own soldiers were dying in crowds of the plague; and he now heard of the assassination, by royal order, of his secretary and confidential friend Escovedo, whom he had sent to Madrid in the previous year to represent his grievances. (See PEREZ, ANTONIO.) At length he was carried off by a fever which had long been consuming him, dying in a wretched hovel hastily prepared for his reception. His body after death presented strong appearances of having been poisoned, but no other evidence of the fact has ever transpired. His funeral was celebrated with great pomp at Namur, and then his embalmed remains were by order of Philip, in order to save the expense of a public progress, divided into three parts and secretly transported through France in bags slung at the pommels of troopers. On their arrival in Spain they were reunited by wires, magnificently robed for presentation to Philip with a mockery of life, and then interred in the Escurial, in accordance with his wish, by the side of Charles V. He was succeeded in the government of the Netherlands by Alexander Farnese, son of the former regent, Margaret of Parma, Don John's sister. (See PARMA, ALESSANDRO FARNESE.)

JOHNSON, BUSHROD R., a general in the service of the confederate states, born in Ohio about 1821, was graduated at West Point in 1846, and appointed 2d lieutenant in the 3d infantry; became 1st lieutenant Feb. 29, 1844, and resigned Oct. 22, 1847, to become professor of mathematics at the western military institute, Georgetown, Ky. This office he held at the outbreak of the civil war in 1861, when he enlisted in the southern service, was made a brigadier-general, and was captured by the Union army at Fort Donelson, but escaped shortly afterward. He was severely wounded in the battle of Shiloh.

JOHNSON, EDWARD, a general in the service of the confederate states, born in Kentucky, was graduated at West Point in 1838 and appointed 2d lieutenant in the 6th infantry; became 1st lieutenant Oct. 9, 1839; was brevetted captain for gallantry at Molino del Rey, Sept. 8, and major for gallantry at Chapultepec, Sept. 13, 1847; distinguished himself also when the U. S. army entered the city of Mexico; became captain in April, 1851; and resigned his commission June 10, 1861, to enter the confederate army. He is now (Dec. 1862) a brigadier-general.

JOHNSON, RICHARD W., brigadier-general of volunteers in the U. S. army, born in Livingston co., Ky., Feb. 7, 1827. He was graduated at West Point in 1849, and commissioned brevet 2d lieutenant in the 6th infantry. In June, 1850, he was promoted to be 2d lieutenant in the 1st infantry, and in the following October joined his regiment on the frontier of Texas. He was appointed adjutant in March, 1853, and served in that capacity until March, 1855, when he became 1st lieutenant in the 2d cavalry. On joining his new regiment, he was made regimental quartermaster, which appointment he held until Dec. 1856. He was then promoted to be captain, and served against the Indians on the Texan frontier. He was on duty in that state in 1861 when the U. S. troops were surrendered by Gen. Twiggs to the rebels, but made his way out of Texas, and soon after his arrival in Washington was appointed lieutenant-colonel of a regiment of Kentucky cavalry. He was commissioned brigadier-general of volunteers Oct. 11, 1861, and assigned to a brigade in Gen. Buell's army. In July, 1862, he commanded a division of that army in Alabama. He was taken prisoner at Gallatin, Tenn., Aug. 21, and exchanged about Dec. 1, and placed in command of a division of Gen. Rosecrans's army.

JOHNSTON, JOSEPH ECCLESTON, a general in the service of the confederate states, born in Virginia about 1810, was graduated at West Point in 1829, and appointed 2d lieutenant in the 4th artillery; became 1st lieutenant July 31, 1836; resigned May 31, 1837; was reappointed 1st lieutenant of topographical engineers, July 7, 1838; was brevetted captain for gallantry in the war with the Florida Indians in Aug. 1842; became captain Sept. 21, 1846; became lieutenant-colonel of voltigeurs, Feb. 16, 1847; was severely wounded while reconnoitring at Cerro Gordo, April 12, 1847, and was brevetted colonel for gallantry there; was wounded in attacking the city of Mexico, Sept. 13, 1847; after the disbanding of the voltigeurs, Aug. 28, 1848, was reinstated by act of congress as captain of topographical engineers, and again brevetted lieutenant-colonel; became lieutenant-colonel of the 1st cavalry March 3, 1855, and quartermaster-general, with the rank of brigadier-general, in June, 1860. He resigned his commission April 22, 1861, and was immediately afterward appointed a general in the confederate army, being the second on its list of officers of that rank. He commanded the force which occupied Harper's Ferry in May, 1861, and which was opposed to the federal general Patterson in that vicinity during May, June, and part of July. Evading that commander, he arrived on the field of Bull run just before the battle, and, being older in rank than Gen. Beauregard, took command during the conflict, but without changing the plan of battle which his predecessor had formed. At the battle of Fair Oaks, May 31, 1862, he was desperately wounded, and was for several months unable to take the field. In Sept. 1862, he was assigned to the command of the country west of the Mississippi, which he now holds (December).

JONES, David Rumph, a general in the service of the confederate states, born in South Carolina about 1827, was graduated at West Point in 1846 and appointed 2d lieutenant in the 2d infantry; was regimental adjutant from April, 1847, to 1849; was brevetted 1st lieutenant for gallantry at Contreras and Churubusco, and captain for gallantry at Chapultepec; became 1st lieutenant in 1849; was assistant instructor in infantry tactics at West Point in 1852; became assistant adjutant-general with the rank of captain in March, 1853, and captain in March, 1855, when he relinquished his rank in the line of the army; resigned his commission Feb. 16, 1861, entered the confederate service, was appointed a brigadier-general, and in Oct. 1862 commanded a division in the army corps lately under Gen. J. E. Johnston in Virginia.

JONES, Thomas M., a general in the service of the confederate states, born in Virginia about 1835, was graduated at West Point in 1853 and appointed brevet 2d lieutenant in the 8th infantry; became regimental quartermaster in 1857, and 1st lieutenant in July, 1858; resigned his commission Feb. 28, 1861, and entered the confederate army, in which he now holds the rank of brigadier-general.

JORDAN, Thomas, a general in the service of the confederate states, born in Virginia about 1821, was graduated at West Point in 1840 and appointed 2d lieutenant in the 3d infantry; became 1st lieutenant June 18, 1846, and assistant quartermaster, with the rank of captain, March 3, 1847. In 1861 he was serving in Texas with the detachment under Major C. C. Sibley, which was surrendered by its commanding officer to Earl Van Dorn at Saluria, April 24. He resigned his commission May 21, entered the confederate army, was assistant adjutant-general to Gen. Beauregard at the first battle of Bull run, and is now (Dec. 1862) a brigadier-general.

JUDAH, Henry M., brigadier-general of volunteers in the U. S. army, born at Snow Hill, Md., June 12, 1821. He was graduated at West Point in 1843, attached to the 8th infantry, and stationed in Florida until the breaking out of the Mexican war. After the battle of Resaca de la Palma he was commissioned 2d lieutenant, and commanded his company at the storming of Monterey. On the battle field of Molino del Rey he was brevetted a 1st lieutenant, and at the capture of the city of Mexico made brevet captain. In 1852 he was ordered to California, and in 1853 promoted to be captain in the 4th infantry. During 9 years he was stationed on the frontier in Oregon and Washington territories and in California, performing active service against the Indians. In 1861 he was placed in command of one of the volunteer regiments in the department of the Pacific. He was made brigadier-general of volunteers March 21, 1862, and appointed by Maj. Gen. Halleck inspector-general of his army on the Tennessee. Resigning his staff appointment, he was ordered to the command of the 1st division of the army of the reserve, which he relinquished after the evacuation of Corinth by the confederate forces, and was reappointed inspector-general. In September, 1862, he was appointed major of the 8th infantry.

K

KANE, Thomas L., brigadier-general of volunteers in the U. S. army, born in Philadelphia, Jan. 27, 1822. He is a brother of the late Dr. E. K. Kane, the arctic explorer. At the age of 17 he was sent to Europe for his education, and during a residence of several years in Paris became a close friend of the philosopher Comte, and a contributor to the *National*, the leading organ of the French democracy. In 1846 he was admitted to the bar of Philadelphia, but he soon relinquished the profession of the law for that of a civil engineer. The next year, while on a journey west of the Mississippi, he visited the Mormon settlements; and being kindly treated there during a severe sickness, he afterward rendered important services to the Mormons during the persecutions which resulted in their expulsion from Nauvoo, and thus acquired such influence among their leaders, that in January, 1858, he was sent to Utah as confidential agent of the government to prevent a threatened conflict between the Mormons and the U. S. troops. He performed this task, and arranged the basis of the settlement afterward agreed upon by the peace commission. He then resumed the profession of engineering in the N. W. part of Pennsylvania, where, in April, 1861, he raised and became colonel of a regiment of hardy woodmen and hunters, commonly known as the "Bucktail Rifles," whom he commanded in the engagements at Dranesville and Harrisonburg. He was wounded in both these actions, and in the latter was taken prisoner; but he was immediately released on parole, and in August, 1862, was exchanged. He was nominated brigadier-general of volunteers Sept. 7.

KEARNY, Philip, major-general of volunteers in the U. S. army, born in New York city, June 2, 1815, killed in battle near Chantilly, Va., Sept. 1, 1862. He was a nephew of Gen. Stephen Watts Kearny, and was educated for the law, but at the age of 22 accepted the commission of 2d lieutenant in his uncle's regiment, the 1st dragoons. Shortly afterward he was sent to Europe by the government to study and report upon the French cavalry tactics. He entered the polytechnic school, fought in the ranks of the *chasseurs d'Afrique* as a volunteer in Algeria, and returned home about 1840 with the cross of the legion of honor. He had been promoted to be 1st lieutenant in 1839. In Nov. 1840, he was appointed aide-de-camp to Gen. Macomb, and in Dec. 1841, aide-de-camp to Gen. Scott, retaining this office until 1844. In 1846 he became captain. He served under Gen. Scott throughout the Mexican campaign, winning the highest distinction by his bravery, and commanding his regiment in the valley of Mexico. He was brevetted major for gallantry at Contreras and Churubusco. In the attack upon the capital he was ordered to charge a battery at the San Antonio gate. His troops, checked by a murderous volley, began to waver, when Kearny dashed forward alone; the men followed him, and the battery was taken. In this affair he lost his left arm. After the war he was sent to California, and commanded an expedition against the Indians of the Columbia river. In 1851 he resigned his commission and went to Europe. During the Italian war of 1859 he served as volunteer aid on the staff of the French general Morris, was present at Magenta and Solferino, and received from the emperor Napoleon a second decoration of the legion of honor. When the American civil war broke out in 1861, he was living in Paris. Hastening to Washington, he was appointed brigadier-general of volunteers just after the battle of Bull run, his commission dating from May 17, 1861, and put in command of a brigade of New Jersey troops in Gen. Franklin's division. He was soon afterward promoted to the command of a division in Gen. Heintzelman's army corps, with which he served through the Chickahominy campaign, distinguishing himself by his desperate valor on all the most important fields of the peninsula. He was commissioned major-general of volunteers July 4, 1862. His division was among the first to reënforce Gen. Pope after McClellan's retreat to the James river, and was almost continually engaged in the battles between the Rappahannock and Washington, from Aug. 25 to Sept. 1.

KELLEY, Benjamin Franklin, brigadier-general of volunteers in the U. S. army, born in New Hampton, N. H., April 10, 1807. He was engaged in commercial pursuits, at first in Boston, and afterward in Wheeling, Va., until 1851, when he removed to Philadelphia and became freight agent of the Baltimore and Ohio, and Philadelphia, Wilmington, and Baltimore railroads. When the civil war broke out he was chosen colonel of the first loyal Virginia regiment, and one week after assuming the command participated in a brilliant victory over the enemy at Philippi, near Grafton in western Virginia, June 3, 1861. He was severely wounded in the action. On his partial recovery, having meanwhile been appointed brigadier-general, with a commission dating from May 17, he took command of the line of the Baltimore and Ohio and N. W. Virginia railroads, captured Romney, Oct. 26, and gained another victory at Blue's gap. His wound becoming painful again, he asked to be relieved, but in April, 1862, was appointed to the command of the "railroad district" in Gen. Fremont's mountain department.

KENLY, John R., brigadier-general of volunteers in the U. S. army, born in Baltimore, Md., in Jan. 1820. He was educated in Baltimore, studied law, and came to the bar on reaching his majority. When the Mexican war broke out, he raised a company in Col. William H. Watson's Baltimore battalion, and distinguished himself as a captain at the capture of Monterey. On the expiration of his term of service, he entered the army again as the major of Col. George H. Hughes's regiment, which took part in the campaign against the city of Mexico, garrisoning Jalapa until peace was proclaimed. He continued to practise his profession in Baltimore, was defeated for congress by Robert M. McLane, and at the breaking out of the civil war in 1861, being a zealous adherent of the U. S. government, he was appointed by the president colonel of the 1st Maryland volunteers, organized in May, 1861; and when a few months later it became necessary to expel from office the secessionist police of Baltimore, Major-Gen. Banks appointed him to the office of provost marshal of that city. He was afterward attached with his regiment to the corps of Gen. Banks in the valley of the Shenandoah, and being attacked at Front Royal, May 23, 1862, by an overwhelming force, while separated from the main body, fought with great gallantry, and was severely wounded and taken prisoner. He was exchanged, and promoted to be a brigadier-general in Sept. 1862, and is now (December) in command of a Maryland brigade at Williamsport on the Potomac. He was always a whig in politics.

KETCHUM, William Scott, brigadier-general of volunteers in the U. S. army, born in Norwalk, Conn., July 7, 1813. He was graduated at West Point in 1834, appointed brevet 2d lieutenant in the 6th infantry, and ordered to join his regiment at Jefferson barracks, Mo. He was made 2d lieutenant in 1836, 1st lieutenant in 1837, assistant quartermaster with the rank of captain in 1839, and captain in 1846. He served in Florida from 1838 to 1842, and in 1845 joined Gen. Taylor's army of occupation at Corpus Christi, Texas. In 1846 he resigned his staff appointment, and was ordered to Fort Gibson. He was commander at Fort Laramie from Sept. 1850, to July, 1852, afterward served against the Indians, was on duty in Kansas in 1857–'8, and then marched with his regiment to Utah, and thence to Benicia, Cal. He commanded various posts in the department of the Pacific until 1861, when he was commissioned lieutenant-colonel of the 10th infantry (Nov. 1). In Feb. 1862, he was made brigadier-general of volunteers, and assigned a command in Gen. Halleck's army of the West.

KEYES, Erasmus Darwin, major-general of volunteers in the U. S. army, born in Sturbridge, Mass., May 29, 1811. He removed to Kennebec co., Me., in early boyhood, and was graduated at West Point in 1832 and appointed brevet 2d lieutenant in the 3d artillery. He was promoted to be 1st lieutenant in 1836, and from 1837 to 1841 was aide-de-camp to Gen. Scott. He became assistant adjutant-general with the rank of captain in 1838, but relinquished this appointment the same year, and in 1841 was promoted to a captaincy in his regiment. From July, 1844, to Dec. 1848, he was instructor of artillery and cavalry at the military academy. Afterward he was ordered to the north-west, where in command of a battalion of artillery he highly distinguished himself in the operations against the Indians of Puget's sound in 1856, and in the several conflicts N. of Snake river, Washington territory, in Sept. 1858. He was appointed major of the 1st artillery the same month, and colonel of the 11th infantry in May, 1861. At the battle of Bull run he commanded the 1st brigade in Gen. Tyler's division, and was highly complimented in the official reports for his behavior during the action. He was soon afterward nominated brigadier-general of volunteers, his commission dating from May 17, and in Feb. 1862, was promoted to the command of one of the 5 corps of the army of the Potomac. He was actively engaged in the battles of the Chickahominy campaign, and for his gallant conduct in the series of battles before Richmond, June 26 to July 2, 1862, was appointed major-general of volunteers, July 4, and brevet brigadier-general in the regular army, to date from May 31, the day of the battle of Fair Oaks. He is now (December) with one division of his corps at Yorktown.

KIMBALL, Nathan, brigadier-general of volunteers in the U. S. army, born in Indiana, served during the Mexican war as captain in the 2d Indiana volunteers, and in 1861 became colonel of the 14th Indiana volunteers, whom he commanded at the operations near Cheat mountain in September, and at the battle of Greenbrier in October. At the battle of Winchester he had charge of a brigade under Gen. Shields. He was commissioned brigadier-general April 15, 1862, and was wounded in the thigh at the battle of Fredericsburg, Dec. 13.

KING, Rufus, brigadier-general of volunteers in the U. S. army, born in New York city, Jan. 26, 1814. He is a son of President King of Columbia college, New York, was graduated at West Point in 1833, appointed brevet 2d lieutenant of engineers, and ordered to Old Point Comfort, to assist in the construction of Fortress Monroe. He was afterward engaged on the boundary survey between Michigan and Ohio, and on the improvement of the navigation of the Hudson river. In Sept. 1836, he resigned his commission and became assistant engineer of the New York and Erie railroad. He was next connected for a time with the Albany "Evening Journal," was then editor of the Albany "Daily Advertiser," and when Mr. Seward became governor, was appointed adjutant-general of the state of New York. Removing to Wisconsin after the close of his term of office, he edited the Milwaukee "Sentinel" until 1861, when Mr. Lincoln appointed him minister to Rome. Obtaining permission to delay his departure during the civil war, he was commissioned brigadier-general of volunteers, May 17, 1861, and assigned a brigade in the army of the Potomac. Soon afterward he resigned his diplomatic appointment. He was promoted to the command of a division in Gen. McDowell's army at Fredericsburg, and when Gen. Fremont requested to be relieved from duty after the organization of the army of Virginia, Gen. King was appointed his successor. As this involved an apparent injustice to officers of higher rank, the command, at Gen. King's own request, was soon afterward transferred to Gen. Sigel, and the former returned to his old division under McDowell. He was taken sick and obliged to retire from the field just before the second battle of Bull run, but reported again for duty in Oct. 1862, and was placed under Gen. Dix's command. He is now (December) a member of the court martial for the trial of Gen. Fitz John Porter.

KUBLAI KHAN, called in Chinese She-tsu and Hu-pe-li, the founder of the 20th or Mongol dynasty of Chinese emperors, born in the earlier part of the 13th century, died in Peking in 1294. He was the grandson of Genghis Khan, under whom the conquest of China had been commenced. A branch of the great Tartar family, known in Chinese history as the oriental Tartars, had harassed the feeble and debauched princes of the Sung dynasty, then governing the principal provinces of China, to such an extent that Li-sung, the reigning emperor about 1250, called in the western Tartars, of whom Kublai Khan was sovereign, to drive out the oriental invaders. This effected, Kublai Khan established himself in China, and in 1260 assumed the title of emperor of that country. The Sung dynasty, though unable to make any effective resistance, continued to maintain a nominal existence till 1279, when it was extinguished. Kublai Khan now entered vigorously upon the administration of his empire. Assisted by 3 wise ministers, Yao-tchu, Hing-heng, and Teou-mo, he reformed the army and the administration of civil affairs, reorganized the tribunals of mathematics and astronomy, and called to his court men of letters from all countries, among them the Venetian merchant Marco Polo. He organized an expedition for the conquest of Japan, but a part of his fleet was overwhelmed by a violent tempest, and the remainder destroyed by the Japanese. The discontent of the nobles and the people at this untoward result admonished the emperor to seek conquests in directions where they might be more easily won, and he subjected to his sway Tonquin and Cochin China, and reigned as emperor from the Arctic sea to the straits of Malacca, and from the Yellow sea to the Euxine. He seems to have been, for his time and his country, a ruler of extraordinary ability and integrity.

L

LABADIEVILLE, a town on the bayou Lafourche, in Assumption parish, La., 20 m. S. from Donaldsonville, on the Mississippi, at the head of the bayou. It was the scene of a battle, Oct. 27, 1862, between a U. S. force under Gen. Weitzel and a body of confederate troops under Col. J. P. McPheeters. Gen. Weitzel, with 5 regiments, left Carrollton, 7 m. above New Orleans, on Oct. 24, and went up the river in transports convoyed by gunboats, on the next day reaching Donaldsonville, where the troops disembarked. On the 26th they went down the bayou 15 m. to Napoleonville, without finding the confederate force known to be in that region, and to drive whom from the bayou was the chief object of the expedition. On the 27th Gen. Weitzel continued his march to Labadieville, on the W. bank of the bayou, where he found the enemy in considerable force on both sides, with 6 pieces of artillery in battery. By means of his floating bridge Gen. Weitzel attacked the confederates in front and on the flank, and after a brisk fight of half an hour drove them from their position, taking many prisoners. On the 28th he entered and occupied Thibodeaux, a few miles below, and on the 29th communication was opened with New Orleans by means of the New Orleans, Opelousas, and great western railroad. The confederate force in this engagement was about 1,200. The loss on the Union side was 18 killed and 68 wounded. That of the confederates was less in killed and wounded, but 206 of them were taken prisoners; among their slain was their commanding officer, Col. McPheeters. The result of the expedition was to open the whole region of the bayou Lafourche to Union occupation.

LAKE DWELLINGS, a name given to certain habitations of which traces have been found in many of the Swiss lakes and elsewhere, and which appear to have existed among savage or half-savage peoples in various ages of the world. Assyrian bass-reliefs show us men inhabiting artificial islands formed of woven rushes. The colonists of Phasis, according to Hippocrates, raised their reed huts in the midst of the river, as the fishermen of the Volga do to this day. Herodotus records that the Pæonians of Thrace built their villages on piles driven into the shallows of Lake Prasias. The Malays and Chinese of Bangkok and the coast of Borneo construct their houses on posts planted in the water at some distance from the shore; and a similar practice noticed by the Spanish discoverers of the lagoon of Maracaybo acquired for one of the South American states the name of Venezuela, "little Venice." The lake dwellings of Ireland, called *crannoges* (little wooden or stockaded islands), are known to have been inhabited as late as 1610. They were wooden fortresses, built on islands wholly or partly artificial, and large enough for a chieftain and a pretty numerous force of retainers. One examined at Dunshaughlin in 1839, beside supplying the Irish archæologists with a rich museum of weapons, ornaments, and other curiosities, furnished the farmers of the neighborhood with over 150 cart loads of bone manure. Of one O'Neil in 1567 there is record that "the fortification that he only dependeth upon is in sartin ffresh-water loghes in his country, which from the sea there come neither ship nor boat to approach them; it is thought that there in the said fortified islands lyeth all his plate, which is much, and money, prisoners, and gages." The islands were formed or enlarged by means of piles, filled in with earth and stones.—The lake dwellings of Switzerland (*Pfahlbauten*, "pile works"), on many accounts the most interesting yet discovered, differ considerably in their construction from those of Ireland, the houses having stood, not upon islands, but upon wooden platforms raised a little above the surface of the water. They were brought to light in 1854, when, in consequence of the extraordinary dryness of the preceding winter, the water in the lakes fell much below its usual level, and some of the inhabitants of Obermeilen, on the lake of Zürich, took advantage of this circumstance to increase their gardens by building a wall along the new water line and raising the surface of the reclaimed land with mud dredged from the bottom of the lake. In the course of their dredging they found great numbers of piles, deer horns, some implements of stone with horn or wooden handles, such as axes, chisels, and saws, and coarse specimens of pottery. The importance of these discoveries was first made known by Mr. Ferdinand Keller of Zürich, whose investigations were soon followed by those of Uhlmann, Jahn, Schwab, Forel, Rey, Desor, Troyon, and many others. Not only the various lakes of Switzerland, but some of those of Italy, Savoy, and the French Jura have been examined, and traces of lake dwellings have been found in Germany, Scotland, and Wales. In Switzerland between 150 and 200 lake villages have been found, and others are frequently coming to light. The lakes of Constance and Zürich seem to have been the most active centres of population. The city of Zürich itself, as well as Geneva and several smaller towns, rests on the site of a buried lake village. In some places the stumps of the piles are still visible a few feet below the surface of the water, but the utensils and other objects, and in many cases the piles themselves, are covered by a thick layer of mud or silt, the accumulation of long ages. These posts, which are planted in vast profusion, one site being said to have as many as 40,000, indicate the extent of the villages, and the degree in which they have been worn away by the water their comparative age. The piles were imbedded in the mud from 1 to 5 feet, and were from 3 to 9 inches in diameter. Supposing them to have projected from 4 to 6 feet above the surface of the water, their length must have been between 15 and 30 feet. How, with the rude implements of the lacustrians (as the Swiss archæologists have named the inhabitants of these structures), trees were felled, sharpened, dragged to the bank, and driven firmly into the bed of the lake, is a matter of curious speculation. In some localities the piles were strengthened by cross beams. A double range of stakes reaching from the principal mass to the shore marks out the place of a bridge which connected the lake village with the land. Near the upright posts lie fragments of wooden beams, roughly squared; these must have been part of the platform raised on the stakes which supported the houses. They are found charred, which indicates that the lacustrian villages were destroyed by fire. In at least one instance, at Wauwyl in the canton of Lucerne, there is reason to believe that the platform was not fastened to the piles, but floated on the water, rising and falling with the fluctuations of level. The piles here are grouped principally around the outer edge of the platform, and the latter consists of 5 layers of trees, curiously fastened together with clay and interlaced branches of trees; but the closest examination has failed to detect any traces of mortises, notches, holes, ligatures, or bolts by which it could have been attached to the upright posts. Fragments of wattled work and fire-hardened clay, concave in form, show the material of which the cabins were built; and by calculating the radius of the curve which they describe, the Swiss archæologists have arrived at the conclusion that the cabins must have been from 10 to 16 or 17 feet in diameter. Lumps of matted foliage and moss are probably the remains of beds, and hollowed trunks of trees were evidently canoes. One of the largest villages, that at Morges in the lake of Geneva, covers a space 1,200 by 150 feet in extent. This, M. Troyon calculates, was large enough, allowing one half for open spaces, for 311 huts, each 17 feet in diameter; supposing that on an average 4 persons inhabited each hut, we have a population of 1,244. He estimates the average population of each of 8 smaller villages in the lake of Neufchâtel to have been 625.—These discoveries possess a particular interest from the fact that they tend strongly to confirm the theory, discussed by Prof. Worsaal, that two distinct races occupied the greater part of Europe before the period at which history properly begins. The first are supposed to have been a people unacquainted with the use of metals, small of stature, and living by the chase and husbandry, and the period in which they flourished is called the "age of stone." They were followed by another and more civilized race, who knew the use of metals, but employed almost exclusively a compound of copper and tin. They were more agricultural than their predecessors. Their age is the "age of bronze." The men of bronze gave place to the men of iron, probably the Celts, of whom we learn something through their enemies the Romans. That the lake dwellings belong to different ages, appears both from the character of the articles found in them, and the extent to which the piles have been worn away. In many of the villages, especially in German Switzerland, the implements found are almost exclusively of stone, generally serpentine or some other native rock, and the posts and other timbers bear marks of having been hewn and sharpened by a stone hatchet and the use of fire. The size of the ornaments, and the grasp of the handles of the hammers and other instruments, show the lacustrians to have been a smaller people than the modern Europeans; arrow heads and lance heads, and the bones of wild animals, prove that they were a race of hunters; sickles, grains of wheat and barley, cultivated fruits, nuts, slices of apples cut as if for drying, and cakes of unleavened meal are indications that they knew something of agriculture; and pastoral habits are denoted by the bones of sheep and oxen, and, more rarely, a small species of horse. They did not practise human sacrifices, for no human bones are found, except a few which might be those of persons who perished in the destruction of the cabins, and some bones of children whose presence is doubtless due to accident. They buried their dead in stone chests, the bodies being doubled up so that face and knees touched each other, and the arms crossed over the breast. The same position is common in the early British tombs. The lacustrians must have carried on some traffic with their neighbors, for among the dwellings of the stone age are found a few implements of metal, some ornaments of superior workmanship, and saws, knife blades, and axes, of a kind of flint which does not occur nearer than France or Germany. Axes are also found of nephrite or jade which must have been brought from the East. They kept domestic animals, for many of the bones are marked by the teeth of dogs, and nearly all those containing marrow are broken. The common mouse and house rat and the domestic cat are not found. The pig, wild boar, ass, goat, stag, roe, fox, marten, beaver, badger, hedgehog, bear, wolf, bison, urus, and elk were among the animals of the period; the fox, which was commoner than the dog, was used for food. The lakes on which pile works of the stone age have been discovered are Moosseedorf (supposed to be the most ancient of any), Constance, Zürich, Bienne, Neufchâtel, Geneva, Inkwyl, Nussbaumen, Pfäffikon, and Wauwyl. Settlements of the bronze period seem to have existed on the lakes of Geneva, Luissel, Neufchâtel, Morat, Bienne, and Sempach. As far as the discoveries have now gone, the latter are therefore peculiar to western and central Switzerland. They do not differ materially from those of the preceding age, except that they are more solidly built. The piles are better sharpened, the pottery is more skilfully made and ornamented, and some useful animals which were comparatively rare in the stone period become common in that of bronze. The lacustrians of this era occupied in some instances the dwellings of their predecessors, as is proved by the occurrence in two perfectly distinct layers of the relics of both ages. Often they drove their piles further from the land and in deeper water than the older race, perhaps because their own experience as conquerors had taught them that more protection was needed as the means of attack were improved. The principal implements of bronze are swords, daggers, axes, spear heads, knives, arrow heads, pins, and ornaments. The discovery of a bar of tin and of moulds for casting shows that the metals were brought into the country in their natural state. Neither of them is produced in Switzerland. These metals, however, were not used separately, and this fact is taken to prove that the men of bronze were a distinct race from the men of stone; for had the introduction of metals been the result of a gradual improvement in the condition of the latter, their first essays would have been in a single metal. Like the people of the stone age, these later comers did not practise human sacrifices, and seem to have led an agricultural, pastoral, and hunting life. That their period was a long one is evident from the thickness of the strata in which their relics have been found. They were finally overpowered by a people who wielded swords and spears of iron, and their dwellings were destroyed by fire. Out of 60 or 80 villages of the bronze age which had been discovered up to 1860, only 11 showed signs, and these slight, of having been occupied in the age of iron.—The precise date of the pile buildings must of course be a subject of conjecture, but the Swiss archæologists have made a very ingenious attempt to estimate it. The torrent of the Tinière, at the point where it falls into the lake of Geneva near Villeneuve, has gradually raised up a cone of gravel and alluvium. In building a railway this cone has been bisected and found very regular in structure, with 3 layers of vegetable soil running through it, each of which must at one time have formed the surface of the cone. These layers are respectively 4 feet, 10 feet, and 19 feet below the present surface. By means of relics found in them, the first or uppermost layer is ascertained to belong to the Roman period, the second to the age of bronze, and the third to the age of stone. Now, allowing something for certain known disturbing causes in the formation of the cone, and assigning to the Roman layer an age of 16 centuries, we have for the bronze age an antiquity of 3,800 years, and for that of stone 6,400 years. A partial confirmation of this hypothesis is afforded by another circumstance. In a marsh about 3,000 feet back of the ruins of the Roman city of Eburodunum, near the lake of Neufchâtel, are found the remains of a lacustrine village of the stone age. The lake therefore once extended to this point, and there is evidence that about A. D. 300 it washed the walls of Eburodunum. The shore of the lake is now 2,500 feet from the Roman city. The intervening land, therefore, built up by the alluvial deposits of the river Orbe, has been at least 15 centuries in forming, and probably more, for Eburodunum appears from its name to have been of Celtic origin. At the same rate not less than 1,800 years would have been required for the deposition of the tract between Eburodunum and the lake village, which consequently must have been abandoned on account of the receding of the water at least 3,300 years ago. To arrive at the date of its foundation it is necessary to add some centuries for the filling up of the strait which separated the village from the ancient shore, still distinctly traceable at the foot of a hill back of the pile works. M. Troyon is led to place its construction about 2,000 years before the Christian era. The animals of the Swiss lake villages, it may be remarked, belong to the fauna which commenced in post-tertiary times with the mammoth, the *rhinoceros tichorhinus*, the cave bear, and the fossil hyæna.—See Troyon, *Habitations lacustres des temps anciens et modernes* (Lausanne, 1860), and Keller, *Die Pfahlbauten in den Schweizerseen* (3 vols., Zürich, 1854–'60).

LANDER, Frederic William, brigadier-general of volunteers in the U. S. army, born in Salem, Mass., Dec. 17, 1822, died at Pawpaw, Va., March 2, 1862. As a boy he was distinguished for intrepidity, love of adventure, and skill in manly exercises. He was educated as a civil engineer, completing his studies at the military academy of Capt. Partridge in Norwich, Vt., and after practising his profession for several years in Massachusetts, was employed by the national government to conduct several important explorations across the continent. Among these may be mentioned two surveys to determine the practicability of a railroad route to the Pacific along the northern boundary of the national territory, from the second of which, organized at his own expense, he alone of all the party engaged returned alive. Subsequently he surveyed and constructed the great central overland wagon route, travelling on one occasion 4,600 miles in 4 months and 15 days, and exploring 13 previously unknown passes in the Wahsatch mountains. While engaged in 1858 upon this work, his party of 70 men were attacked by the Pah Ute Indians, over whom they gained a decisive victory, thereby insuring safe conduct to the numerous emigrant trains crossing the continent. While in the city of Washington, in April, 1860, he acted as second to John F. Potter, member of congress from Wisconsin, when challenged to a duel by Roger A. Pryor, a member from Virginia; and the latter having refused to fight with the weapons selected, bowie knives, Lander challenged him to fight with any weapons and in any manner he chose, which was also declined. At the breaking out of the civil war in 1861 he offered his services to Gen. Scott "in any capacity, at any time, and for any duty" which might be assigned to him, and was successfully employed on several important secret missions in the southern states. In the spring of 1861 he served as a volunteer aid on the staff of Gen. McClellan, and participated with great credit in the capture of Philippi and the battle of Rich mountain. In the latter affair his coolness and daring at a critical period of the fight turned the scale against the confederates. In July he was appointed a brigadier-general of volunteers, and assigned to an important command on the upper Potomac. Hearing while in Washington of the disaster at Ball's bluff, he hastened to Edwards's ferry, and with a single company of sharpshooters held the position against every effort of the enemy. On this occasion he was severely wounded in the leg. Before the wound was healed he reported for duty, and was ordered to superintend the reopening of the Virginia portion of the Baltimore and Ohio railroad, and at the same time to assume command of Gen. Kelley's forces at Romney. Reaching Hancock on Jan. 5, 1862, he repulsed a greatly superior confederate force which had besieged the town, but was obliged, in obedience to orders from his superior officer, to evacuate Romney, which he did without loss. He however soon after recovered it. Though much debilitated by his wound, he performed his duties with energy and judgment, and particularly distinguished himself by a brilliant dash upon the enemy at Blooming gap, which he reached after a forced march of 43 miles through deep snow, without rest and with scanty subsistence, on the morning of Feb. 14, 1862. He at once charged impetuously upon a body of confederates; and though his troopers, recoiling before a musketry fire, hung back almost to a man, the confederate officers were so completely surprised that they surrendered without hesitation. The enemy lost nearly 100, principally in prisoners, of whom 17 were commissioned officers, and their camp was entirely broken up. In a special letter of thanks written by the secretary of war in behalf of the president, the former observes: "You show how much can be done, in the worst weather and worst roads, by a spirited officer, at the head of a small force of brave men, unwilling to waste life in camp when the enemies of their country are within reach." Soon afterward Gen. Lander was compelled by increasing ill health to apply for a temporary relief from military duties. Before his request could be complied with he learned that the enemy were within his reach, and on March 1 prepared for a midnight attack upon them, but died suddenly of congestion of the brain, produced by debility, just previous to the departure of the expedition. His decease was announced to the army in a special order issued by Gen. McClellan on March 3, in which it is said that "as a military leader he combined a spirit of the most daring enterprise with clearness of judgment in the adaptation of means to results. As a man his devotion to his country, his loyalty to affection and friendship, his sympathy with suffering, and his indignation at cruelty and wrong, constituted him a representative of true chivalry."

LANE, James Henry, U. S. senator from Kansas, born in Lawrenceburg, Ind., June 22, 1814. He studied law and was admitted to the bar, but in 1846 abandoned a fair professional practice to enlist as a private in the 3d Indiana volunteers, then organizing for the Mexican war. He was soon chosen colonel, and at the battle of Buena Vista commanded a brigade, and highly distinguished himself. When the year's term of service of his regiment expired, he returned home and raised the 5th Indiana volunteers. In 1848 he was chosen lieutenant-governor of Indiana, and in 1852 member of congress and elector at large on the democratic ticket. In 1855 he went to Kansas, and was chosen chairman of the executive committee of the Topeka convention which instituted the first state government of Kansas. He was subsequently president of the Topeka constitutional convention, and was elected by the people major-general of the free state troops. In 1856 he was elected to the U. S. senate by the legislature which met under the Topeka constitution, but the election was not recognized by congress, and about the same time he was indicted by the grand jury of Douglas county for high treason on account of his participation in the Topeka government, and was forced to flee the territory. In 1857 he was president of the Leavenworth constitutional convention, and in the same year was elected major-general of the Kansas troops by the territorial legislature. In 1858 he shot a neighbor named Jenkins in a quarrel about a well, for which he was tried on a charge of murder and acquitted. In March, 1861, he was elected to the U. S. senate by the legislature which convened in pursuance of the constitution under which Kansas was admitted into the Union. At the beginning of the secession troubles he commanded the "frontier guards" enlisted for the defence of Washington. In June, 1861, he was nominated brigadier-general of volunteers, and commanded the Kansas brigade in the field for 4 months. He was again nominated brigadier-general in December with a view to command an expedition in the South-West, projected by himself, but the expedition was abandoned, and he accordingly resigned. After the adjournment of congress in July, 1862, he was appointed commissioner to superintend the enlistment of troops in the West.

LARAMIE, Fort, a military station and post office of Nebraska territory, on the road to Oregon, situated on the N. fork of Platte river, near the mouth of Laramie's creek, in lat. 42° 12′ N., long. 104° 31′ W. It was formerly known as Fort John, and is one of the posts established for the protection of their trade by the American fur company, who sold it to the United States about 1848 or 1849. It is built of adobes or unburnt bricks, and stands in the midst of a dry and sterile country, which, however, seems capable of profitable irrigation.

LAUMAN, Jacob Gartner, brigadier-general of volunteers in the U. S. army, born in Taneytown, Md., Jan. 20, 1813. His early days were passed in York, Penn., and in 1844 he removed to Burlington, Iowa, where he engaged in commerce and has since resided. He obtained a commission as colonel of the 7th Iowa regiment in July, 1861, served under Gen. Grant in Missouri, and was severely wounded at the battle of Belmont. He commanded a brigade at the attack on Fort Donelson, being one of the first to storm and enter the enemy's works, and for his conduct on this occasion was made brigadier-general of volunteers, March 21, 1862. Gen. Lauman commanded a brigade in Gen. Hurlbut's division at the battle of Shiloh.

LAVERGNE, a post office of Rutherford co., Tenn., about 15 m. S. E. from Nashville, where an engagement took place Oct. 7, 1862, between the Union forces under Gen. J. S. Negley and the confederates under Gen. S. R. Anderson. Gen. Anderson, Gen. Forrest, and Gov. Harris had been concentrating here a confederate force for the purpose of attacking Nashville, and to check this movement two bodies of Union troops marched upon Lavergne from the capital; one of these consisted of 400 infantry, 400 cavalry, and 4 pieces of artillery; the other of 1,800 infantry. The advance was retarded by the confederate skirmishers, by which Gen. Anderson was enabled to place his troops advantageously before the morning of the 7th, when the action opened. The Union force first described reached Lavergne in advance of the other, and was received with an artillery fire from 3 guns; this battery was, however, soon silenced, and at the moment when the confederates, in number about 5,000, were preparing to make an assault in full force upon the Union column, the 1,800 infantry appeared and ended the fight in half an hour. The confederates fled in disorder, leaving in the hands of Gen. Negley 175 prisoners, 3 pieces of artillery, large quantities of ordnance and quartermaster's stores, together with a considerable amount of provisions and camp equipage. The Union loss was 5 killed, 9 wounded, and 4 missing; that of the confederates in killed and wounded was about 80.—Another skirmish occurred about 5 m. N. of Lavergne, Dec. 9, 1862, between a Union brigade under Col. Matthews, escorting a forage train, and a brigade of confederate cavalry, one regiment of infantry, and a battery of artillery. The confederates made two attempts to capture the train, but were each time repulsed. The Union loss was 3 killed, 31 wounded, and 9 missing.

LAWTON, Alexander R., a general in the confederate service, born in Georgia about 1820, was graduated at West Point in 1839 and appointed 2d lieutenant in the 1st artillery, and resigned his commission Dec. 31, 1840. He studied law and was admitted to the bar at Savannah in 1842, and while practising his profession took much interest in the progress of the state militia. In 1849 he was chosen president of the Savannah and Augusta railroad company, which office he filled for several years. On the outbreak of the civil war in 1861 he entered the service of Georgia, but was subsequently transferred to the confederate army, in which he is now a brigadier-general.

LEE, Robert Edmund, a general in the service of the confederate states, born in Virginia about 1808. He is a son of Gen. Henry Lee, and was graduated at West Point 2d in his class in 1829, and commissioned 2d lieutenant of engineers. He was assistant astronomer for fixing the boundary of Ohio and Michigan in 1835; promoted to be 1st lieutenant in 1836, and captain in 1838; was chief engineer of the army commanded by Gen. Wool in Mexico, and by his gallant conduct at Cerro Gordo, Contreras and Churubusco, and Chapultepec, where he was severely wounded, won the brevets of major, lieutenant-colonel, and colonel. In 1852 he was appointed superintendent of the military academy at West Point, and in 1855 relieved from that duty, and promoted to be lieutenant-colonel of the 2d cavalry. He was made colonel of the 1st cavalry, March 16, 1861, and on April 25 resigned his commission and joined the southern confederacy. Three days before this he was appointed commander of the military and naval forces of Virginia; and on May 10 he received the commission of major-general in the army of the confederate states, with control over all the forces in Virginia. This was shortly followed by his promotion to the rank of general in the regular army. His first active operations were in the western part of the state, where on Oct. 3, 1861, he was defeated by Gen. J. J. Reynolds at the battle of Greenbrier. He subsequently took command of the department of the south Atlantic coast. After Gen. Johnston was wounded at the battle of Fair Oaks, Lee was placed at the head of the confederate forces defending the southern capital, and led them through the remainder of the Chickahominy campaign. He conducted the attack upon Gen. Pope's "army of Virginia" in August, and after driving it back to Washington crossed the Potomac into Maryland, near Leesburg, Sept. 4, 5, and 6, at the head of a large force, and occupied Frederic. Defeated by McClellan in the battle of Antietam, he retired again into Virginia, having gained little by the advance, and lost nothing on his retreat. He is general-in-chief of the confederate armies, and has personal command of the army of north-eastern Virginia.

LEFEBVRE-DESNOUETTES, Charles, count, a French general, born in Paris, Sept. 14, 1773, died by shipwreck near Kinsale, on the coast of Ireland, April 22, 1822. He escaped from college to enter the army, from which his release was three times purchased by his relatives. He served under Dumouriez in 1792, reaching the rank of captain, was aide-de-camp to Bonaparte at the battle of Marengo, became colonel in 1804, and for his services at the battle of Austerlitz was made commandant of the legion of honor. In 1806 he was made brigadier-general, passed some time in the service of the king of Westphalia, and in 1808, with the rank of general of division, went to Spain, where in June he commenced the siege of Saragossa, but soon afterward joined the corps of Bessières. During the pursuit of Sir John Moore, in December, he was taken prisoner and sent to England, whence, being at large on parole, he escaped, and received from Napoleon, at the commencement of the campaign against Austria in 1809, the command of the chasseurs of the guard. In 1812 he accompanied the expedition to Russia, remained constantly with the emperor during the retreat, in the following May contributed largely to the victory of Bautzen, gained possession in August of the mountains of Georgenthal, was beaten at Altenburg, Sept. 2, by Platoff and Thielmann, and on Oct. 30 gained a brilliant advantage over a corps of Russian cavalry. In the combat at Brienne, Feb. 6, 1814, he won great distinction at the head of the cavalry, and received several lance and bayonet wounds. He commanded the escort which conducted Napoleon as far as Roanne after his abdication, and afterward remained at the head of the royal chasseurs. On hearing of the emperor's return from Elba, he joined the brothers Lallemand in the unsuccessful attempt to gain possession of the arsenal at La Fère and to win over several garrisons, was obliged to escape in disguise, was named a peer by Napoleon on his arrival at Paris, and fought with great intrepidity at Fleurus and Waterloo. After the second restoration he was condemned to death and fled to the United States, where he shared in the efforts to found a colony of French refugees, first near Mobile, Ala., then on the Trinity river in Texas, and again on the Tombigbee in Alabama, of which last he had the principal direction, and all of which failed after great suffering and the expenditure of large subscriptions raised in France. When shipwrecked, he was on his way to Belgium, in the hope of being able to reënter his native country. Napoleon left him in his will 150,000 francs, of which his heirs received a part from the funds in the hands of the banker Laffitte, and most of the remainder from Napoleon III.

LEMOINE, or Lemoyne, the surname of a distinguished Canadian family, several of whose members performed important parts in the history of American colonization. The family arose with Charles Lemoine, born in Normandy, sieur of Longueil and of Châteaugay, places in the vicinity of Montreal, where he resided. François de Lauzon, to whom 60 leagues of land had been granted by the royal government, counted Lemoine among his first vassals, on whom in 1657 he conferred the amplest seigniorial rights. The fief of the family was increased in 1664 by the addition of the island of Ste. Hélène, Round island, and other possessions. Charles Lemoine was a noted leader in the war of the French against the Iroquois, and was zealously recommended to the French government for appointment to the office of governor of Montreal, as having more than any other man contributed to the peace concluded with that tribe. He had 11 sons, of whom the following were distinguished. I. Charles, baron of Longueil, born in Montreal, Dec. 10, 1656, died there, June 8, 1729. He exercised a great influence over the Indians; fought against the English under Phipps, who attacked Quebec in 1690; was made governor of Montreal and baron in 1700 on account of his services to the colony, and especially for having built a fort of stone with 4 bastions on his estate at Longueil; fought successfully against the English general Nicolson in 1711; was made a chevalier of St. Louis; and persuaded the Iroquois in 1726, in spite of the opposition of Burnet, governor of New York, to rebuild Fort Niagara. He was superseded as governor Sept. 2, 1726. II. Jacques, sieur de Sainte Hélène, served under Iberville against the English in 1697, fought against them at Quebec in 1699, and died in 1700. III. Pierre, sieur d'Iberville, born in Montreal, July 20, 1661, died in Havana, July 9, 1706. (See Iberville, vol. ix.) IV. Paul, sieur de Maricourt, born in Montreal, Dec. 15, 1663, died there about 1702, distinguished himself under his brother Iberville in Hudson's bay, and commanded the Iroquois who adhered to the French, and the Abenakis in a great expedition under Frontenac; was sent on an embassy to the hostile Iroquois in 1699, and afterward had much to do in negotiating peace with them in 1701. V. François, sieur de Bienville, born in Montreal, March 10, 1666, killed in battle with the Iroquois at Repentigny, June 7, 1691. VI. Joseph, sieur de Serigny, born in Montreal, July 22, 1668, died in Rochefort, France, in 1734. Bred a sailor, and holding a commission in the royal navy, he also served under Iberville during his exploits against the English in Hudson's bay; was employed in duties connected with the colony of Louisiana, the coasts of which he surveyed in 1718–'19; took Pensacola from the Spaniards, May 14, 1719, and repulsed them with great gallantry from Dauphin island in Mobile bay, they retiring, Aug. 19, 1719, after a siege of a fortnight; was promoted to the rank of captain of a ship of the line in 1723, and soon afterward was made rear admiral and governor of Rochefort, which office he held at his death. VII. Sauvolle, first colonial governor of Louisiana, born in Montreal about 1671, died of disease of the heart at Biloxi, in the present state of Mississippi, July 22, 1701. Though of feeble constitution, he early gave evidence of remarkable talent; and having, when an infant, inherited a large fortune from an aunt, he was sent to France to be educated. Distinguished at college, and of a striking personal appearance, his success in society was equally brilliant. He was known as the American prodigy. Racine pronounced him a poet; Bossuet predicted that he would be a great orator; and Villars called him a marshal of France in embryo. Feeling that he could not expect a long life, he begged his brothers Iberville and Bienville to take him with them on their expedition to the mouth of the Mississippi. Iberville left him in command of the colony, of which in 1699 Louis XIV. appointed him governor, which office he retained until his death. VIII. Jean Baptiste, born in Montreal, Feb. 23, 1680, died in France in 1768. He took the title of sieur de Bienville after the death of his elder brother François. (See Bienville, in this supplement.) IX. Louis, sieur de Châteaugay, born in Montreal, Jan. 5, 1676, killed in battle against the English at Fort Nelson, Hudson's bay, Nov. 4, 1694. X. Antoine, sieur de Châteaugay, born in Montreal, July 7, 1683, died at Cayenne about 1730. He entered the royal navy, and arrived in Louisiana in 1704 at the head of a small body of colonists; served under Iberville in his last expeditions against the English in 1705–'6; took command of Pensacola after its capture from the Spaniards, May 14, and surrendered it to them Aug. 7, 1719, himself remaining in their hands as a prisoner of war until July, 1720; was appointed lieutenant-governor of the colony in 1719; took command at Mobile after the peace in 1720; was removed from office in 1726, and ordered to France, whence he was subsequently sent to Cayenne as governor, which office he held at his death.

LEWINSVILLE, a village of Fairfax co., Va., where a skirmish took place Sept. 11, 1861. Gen. McClellan having ordered a topographical reconnoissance to be made on the S. side of the Potomac, near Lewinsville, Col. Isaac I. Stevens, with a force consisting of detachments from several regiments, in number about 2,000, was detailed for the work. The force proceeded without molestation to the place aimed at, a distance of 4 miles, and completed the reconnoissance without exchanging shots with the confederates, some of whose cavalry were seen in the neighborhood. While on the march home, however, a column of the confederates, comprising 700 of Stuart's cavalry, 2 regiments of infantry, and 4 pieces of artillery, attacked the Union troops with shot and shell, following it with a brisk fire of musketry from behind trees and other places of shelter; this was replied to by a section of a U. S. battery, consisting of 2 10-pounder rifled cannon, with which the confederate guns were silenced, and their troops caused to retreat. The loss on the Union side was 2 killed and 10 wounded, most of them only slightly. The confederates lost 4 killed, a number wounded, and 1 prisoner.

LEXINGTON (Mo.), Battle of. The attack of a large confederate force upon a body of Union home guards numbering about 430, stationed at Lexington, on Aug. 29, 1861, although the assault was repulsed, led to the sending to this point, Sept. 9, of an Irish regiment and some other troops under Col. Mulligan, in all swelling the numbers to nearly 2,500 men. Meantime, the retreat of the Union forces after the battle of Wilson's creek having left the S. W. part of the state open to the confederates, Gen. Sterling Price advanced northward upon Lexington with an army of 12,000, which was increased on his way and after arrival by junction with Col. Green and others to not less than 20,000. Hearing of the advance of Price, Mulligan had intrenched himself about midway between the old and new towns of Lexington, which are about a mile apart, enclosing a large area on three sides with a high earthwork and a ditch, the fourth side being protected by the river; within the enclosure, beside the troops, were the wagons and trains and a large number of horses and mules. The only artillery for which Mulligan had ammunition consisted of 5 brass pieces, and his cavalry were provided only with pistols and side arms. On the 12th the assault commenced, Gen. Rains with 9 pieces of artillery attacking the western side of the works, which was weakest; and though his men reached the hospital and bayoneted some of the inmates on their cots, they were repulsed with severe loss. Skirmishing continued for several days, during which Col. Mulligan sent to Jefferson City an urgent request for reënforcements, but for various reasons none reached him. The shot and shell thrown by the enemy continued to make havoc among the animals and the stores, the fright of the former becoming an added source of danger to the men; and the ground containing no wells or springs, the situation of the Union troops became still more distressing when, on the 17th, they were by the enemy's position cut off from access to the river, their rations at the same time growing short. The confederates, advancing and firing behind bales of hemp which they rolled before them, had under cover of these secured a position in the rear; and from this time they made few assaults, waiting until Col. Mulligan should surrender through necessity. On the 21st the home guard, becoming discouraged, raised in a part of the camp distant from their commander's position a white flag, which he ordered to be taken down. A severe assault was then made from within the works upon the nearest battery of the enemy; but the discontented body having in the mean time withdrawn within the inner line of works, and again raised a white flag, Col. Mulligan decided to capitulate. By the terms allowed, the officers were retained as prisoners, the men being permitted to depart without their arms, and under a pledge not again to serve against the confederate states. The Union loss in killed and wounded has been stated at 130, and also at about 300; that of the confederates was probably equally great; they secured by the capture several thousand stand of arms, many horses, the cannon, and a large quantity of stores, together with more than $250,000 which had been buried within the works, but which they unearthed. On Sept. 29, upon the approach of Gen. Fremont, Price commenced the evacuation of Lexington, leaving only a garrison of about 300 men. On Oct. 16, Major White with 250 Union troops surprised the garrison and recaptured the place, taking the troops prisoners along with the sick and wounded remaining there, 2 cannon, and a quantity of arms. The town was found to have been stripped of movable articles, and many of the inhabitants were suffering for the necessaries of life.

LITTLE, Henry, a general in the service of the confederate states, born in Baltimore, Md., killed in the battle of Iuka, Sept. 19, 1862. He was appointed 2d lieutenant in the 5th infantry July 1, 1839, was transferred to the 7th infantry in May, 1843, and became 1st lieutenant in April, 1845; was brevetted captain for gallantry at Monterey, Sept. 23, 1846, and distinguished himself at Cerro Gordo; became captain in Aug. 1847; and resigned May 7, 1861, to enter the confederate army, in which he was a brigadier-general at the time of his death.

LOCKWOOD, Henry Hall, brigadier-general of volunteers in the U. S. army, born in Kent co., Del., Aug. 17, 1814. He was graduated at West Point in 1836, and appointed brevet 2d lieutenant in the 2d artillery. He served under Gen. Jesup in Florida in 1836–'7, resigned his commission in September of the latter year, was appointed professor of mathematics in the navy in 1841, and being ordered to the frigate United States made a 3 years' cruise with her in the Pacific (1842–'5), and participated in the capture of Monterey, Cal. (1842). On his return he was ordered to the naval asylum at Philadelphia, and thence to the naval school at Annapolis (1845) as professor of natural and experimental philosophy, which appointment he continued to hold until 1851, when he was transferred to the chair of field artillery and infantry tactics. He has also held at different times the professorships of astronomy and gunnery. In 1861 he was chosen colonel of the 1st Delaware volunteers, and on Aug. 8 commissioned brigadier-general of volunteers, and assigned to the army of the Potomac. In September he was ordered to establish a camp at Cambridge, Md., and soon afterward took possession of Accomac and Northampton cos., Va., on the peninsula between the Chesapeake and Delaware. Gen. Lockwood has published a work "On Small Arms and other Military Exercises, adapted to the Naval Service" (1852), and a "Manual of Naval Batteries."

LOGAN, John Alexander, brigadier-general of volunteers in the U. S. army, born in Jackson co. Ill., Feb. 9, 1826. He received but a limited education, and in 1845 volunteered in the 1st Illinois regiment for the Mexican war. He was elected 1st lieutenant, and for some time was adjutant of the regiment. Returning home in 1848, he studied law, was admitted to practice in 1851, became prosecuting attorney of the 3d judicial district in 1852, was elected to the state legislature from Franklin and Jackson cos. by the democrats in the same year and also in 1856, and in 1858 and 1860 was chosen a representative in congress. In 1861 he enlisted as a private in a regiment of Michigan volunteers, fought at Bull run, July 21, returned to Illinois in August, and raised the 31st regiment of volunteers, which he commanded at the battle of Belmont. He was severely wounded in the attack on Fort Donelson. He was commissioned brigadier-general of volunteers March 21, 1862, and assigned a brigade under Gen. Grant. During the months of May and June he commanded the division engaged in rebuilding the railroad to Jackson and Columbus, after the completion of which he was placed in command of the forces at Jackson, Tenn.

LONGSTREET, James, a general in the service of the confederate states, born in South Carolina about 1823, was graduated at West Point in 1842 and appointed brevet 2d lieutenant in the 4th infantry; became 2d lieutenant in the 8th infantry March 4, 1845, and 1st lieutenant Feb. 23, 1847; was regimental adjutant from 1847 to 1849; was brevetted captain for gallantry at Contreras and Churubusco, Aug. 20, and major for gallantry at Molino del Rey, Sept. 8, 1847; distinguished himself at Chapultepec, where he was severely wounded; became captain in Dec. 1852; and was appointed paymaster, with the rank of major, July 19, 1858. He resigned his commission June 1, 1861, and 17 days afterward commanded as a brigadier-general the confederate troops in the battle of Blackburn's ford. He was in the battles of the Chickahominy campaign, led an army corps in Lee's invasion of Maryland, was made a lieutenant-general in Oct. 1862, and in December commanded the left in the battle of Fredericsburg.

LORING, William W., a general in the service of the confederate states, born in North Carolina about 1815, was 2d lieutenant in a company of mounted volunteers serving in Florida in the Indian war of 1835–'42; was appointed captain in the mounted rifles May 27, 1846, and major Feb. 16, 1847; was brevetted lieutenant-colonel for gallantry at Contreras and Churubusco, and colonel for gallantry at

Chapultepec; lost an arm in storming the Belen gate of Mexico; became lieutenant-colonel March 15, 1848, and colonel Dec. 30, 1856; served in New Mexico, and distinguished himself in conflicts with the Indians there, in 1857; resigned May 13, 1861, and was appointed a brigadier-general in the confederate army, in which he is now (Dec. 1862) a major-general. In Sept. 1862, he took command of the confederate forces in western Virginia, but was recalled a month later.

LOVELL, Mansfield, a general in the service of the confederate states, born in the District of Columbia about 1823, was graduated at West Point in 1842 and appointed 2d lieutenant in the 4th artillery, and 1st lieutenant Feb. 6, 1847; served during the Mexican war as aide-de-camp to Gen. Quitman, between whom and himself a great intimacy long afterward continued to exist; was brevetted captain for gallantry at Chapultepec, where he was wounded; was also wounded in the Belen gate conflict; and resigned Dec. 18, 1854, along with his friend Capt. G. W. Smith, now also a general in the confederate service, in order to join Gen. Quitman's projected Cuban expedition. Smith and Lovell, who were to have held important commands in the Cuban army, were employed after the failure of that scheme in connection with Messrs. Cooper and Hewitt's iron works at Trenton, N. J. In 1858 Smith was appointed street commissioner of the city of New York, and Lovell became his deputy. While serving in that capacity he also became captain of an artillery company known as the city guard in the New York militia, and drilled it to the use of heavy artillery for coast defence. After the outbreak of the civil war in 1861, the services of the division in which this company belonged were offered to the federal government, whereupon he resigned. He remained in New York for some time afterward, when he made his way to the South, was made a brigadier-general, and on Oct. 9, 1861, was appointed to command at New Orleans. There he remained until the approach of the federal forces under Commodore Farragut and Gen. Butler compelled him to retire. His present rank is that of a major-general.

LYON, Nathaniel, brigadier-general of volunteers in the U. S. army, born at Ashford, Windham co., Conn., July 14, 1819, killed at the battle of Wilson's creek, Mo., Aug. 10, 1861. He was graduated at West Point in 1841 and appointed 2d lieutenant in the 2d infantry, distinguished himself in the Florida war, and subsequently served at various posts on the western frontier. In 1846 he took part in the capture of Monterey, was made 1st lieutenant in Feb. 1847, and, joining with his regiment the army under Gen. Scott, was present in the actions at Vera Cruz and Cerro Gordo, commanded his company at Contreras and Churubusco, winning the brevet rank of captain, and was wounded in the assault on the Belen gate of Mexico. At the close of the war he was ordered to California, and received the full rank of captain. He was on active duty in Kansas during the free state troubles there. Soon after the outbreak of the civil war in 1861 he was placed in command of the arsenal at St. Louis, Mo., around which batteries and earthworks were erected, guns mounted, and the small garrison so disposed in the neighborhood as to secure it against surprise. On May 7 the police commissioners of St. Louis, on constitutional grounds, formally demanded the withdrawal of the troops from all places and buildings outside of the arsenal grounds, which Capt. Lyon refused. Meantime the state militia had been called out by the governor, C. F. Jackson, and several encampments formed, ostensibly for instruction and the preservation of order, but really, as there was reason to believe, preparatory to the forcible secession of the state. That at St. Louis, called Camp Jackson, furnished with arms from the arsenal at Baton Rouge, La., then in the hands of the secessionists, was commenced on May 6, and broken up by Capt. Lyon on the 10th, with the aid of several thousand citizens organized as home guards. (See Camp Jackson.) Gen. Harney, commander of the department, soon after arrived, and issued a proclamation approving of Capt. Lyon's proceeding; but, having on the 21st entered into an agreement with Gen. Sterling Price, the commander of the state militia, to make no military movement so long as the peace of the state was preserved by its authorities, he was recalled 10 days later, and the command devolved upon Capt. Lyon, now brigadier-general of Missouri volunteers. On June 11 he granted an interview to Gov. Jackson and Gen. Price, in which they urged the preservation of the neutrality of the state, and the confinement of the U. S. troops to the places then held by them. Gen. Lyon having refused these overtures, the governor returned to Jefferson City, issued a proclamation calling for 50,000 militia to "repel the invasion of the state," and on the 14th departed for Booneville with the troops he had collected. Gen. Lyon followed him thither from St. Louis, leaving a garrison at Jefferson City and taking possession of the state archives, and defeated the militia on the 17th. (See Booneville, in this supplement.) He then marched to Springfield, where his forces, with those previously there under Gen. Sweeny, amounted to about 6,000. He had in the mean time been superseded in the command of the department by Gen. Fremont. On Aug. 1 he advanced to give battle to the approaching confederates under Gen. McCulloch, a portion of whose army he met the next day and defeated at Dug Spring, about 19 m. S. W. of Springfield, to which he returned on the 6th. (See Dug Spring.) McCulloch being now joined by Gen. Price, the confederate army became 4 or 5 times as large as his own, and was threatening his position. He had sent frequent and urgent requests for additional troops, but finding it impossible to procure them, determined, rather than abandon S. W. Missouri, to risk a battle with his present force. He accordingly advanced and met the enemy on the 10th at Wilson's creek, and in the ensuing battle, after being twice wounded, was leading into action a regiment whose colonel had been killed, when he was struck in the breast by a Minié ball, and almost instantly expired. (See WILSON'S CREEK.) His remains were conveyed to Connecticut for interment, and great honors were paid to his memory. He bequeathed nearly all his property, amounting to about $30,000, to the government, to aid in the preservation of the Union. In 1860, while stationed at Camp Riley, Kansas, Capt. Lyon published in a local newspaper a series of letters in favor of the election of Abraham Lincoln to the presidency, and in exposition of the doctrines of the republican party, which have been collected into a volume entitled "The last Political Writings of Gen. Nathaniel Lyon," with a memoir (12mo., New York, 1862).

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McARTHUR, JOHN, brigadier-general of volunteers in the U. S. army, born in the parish of Erskine, Renfrewshire, Scotland, Nov. 17, 1826. He is the son of a blacksmith, and worked in his father's shop till the age of 23, when he emigrated to Illinois and settled in Chicago. Here he was employed for some time as foreman of boiler making in a foundery, and afterward opened a smithy and boiler factory of his own. When the civil war broke out he joined a volunteer regiment with a militia company of which he was captain, and was chosen lieutenant-colonel. Soon afterward he became colonel of the 12th Illinois volunteers. He commanded a brigade at the attack on Fort Donelson, and for his gallantry on that occasion was commissioned brigadier-general of volunteers, March 21, 1862. He was wounded in the battle of Shiloh, and now (Dec. 1862) holds a command in the corps of Gen. Grant.

McCALL, GEORGE ARCHIBALD, a brigadier-general of volunteers in the U. S. army, born in Philadelphia, March 16, 1802. He was graduated at West Point in 1822, brevetted a 2d lieutenant in the 1st infantry, and in the same year transferred to the 4th infantry. In 1831 he was appointed aide-de-camp to Gen. E. P. Gaines, and served as assistant adjutant-general in the western department until 1836, when he was promoted to a captaincy. For his services during the war with the Florida Indians he was recommended by Gen. Worth for a major's brevet, which however was not conferred upon him until 1846, when for gallantry at the battles of Palo Alto and Resaca de la Palma he received the brevets of major and lieutenant-colonel. The citizens of Philadelphia also presented him with a sword. In 1847 he was promoted to be a major in the 3d infantry, and in 1850, while commanding his regiment in New Mexico, received from President Taylor the appointment of inspector-general of the army, with the rank of colonel of cavalry. He served in this capacity until April 29, 1853, when he resigned his commission and retired to his residence in Chester co., Penn. At the outbreak of the civil war in 1861 he was requested by Gov. Curtin of Pennsylvania to organize a corps of 15,000 men, to be called the Pennsylvania reserve corps, who by act of the legislature were detailed for the defence of the state frontier. He accordingly organized 12 regiments of infantry, 1 of riflemen, 1 of artillery, and 1 of cavalry, with which, having on May 17, 1861, been commissioned a brigadier-general of volunteers, he marched to Washington, where the corps was converted into a division of 3 brigades, of which he assumed the command. During the winter of 1861–'2 he held the extreme right of the lines in front of Washington, and planned the movement against Dranesville, Dec. 20, 1861, which resulted in a brilliant victory to the Union arms. His division was retained on the Potomac after the departure of McClellan to the peninsula; but on June 18, 1862, he joined the army before Richmond, taking post at Mechanicsville, near the corps of Fitz John Porter, to which he was temporarily attached, on the extreme right of the line and on the left bank of the Chickahominy. On the 25th he retired behind Beaver Dam creek, 1 m. S. of Mechanicsville, and on the succeeding day fought a severe battle with a greatly superior force of the confederates, who were repulsed at nightfall with great loss. At daybreak of the 27th, in accordance with orders from Gen. McClellan, he fell back several miles to Gaines's mill, where he held the left of the Union line in the desperate battle of that day. The Pennsylvania reserve suffered more in proportion to their numbers in these two days than any other division in the army, but preserved their organization intact and were commended for steadiness and valor. During the march toward the James river, Gen. McCall accompanied the advance under Porter, and on the 30th fought a superior confederate force at the crossing of the Turkey bridge and New Market roads, his special duty being to defend the wagon trains passing that point. Having beaten the enemy off after a hard struggle, he was reconnoitring in the darkness in front of his line, when he was surprised and captured by a body of confederate troops. After suffering a rigorous confinement in Richmond, he was exchanged in the middle of August, and returned to his home in Chester county for the benefit of his health, which was much impaired by his imprisonment.

On the 26th of the month he received from the citizens of Chester a sword, and in the succeeding October was the unsuccessful candidate for congress of the democratic party in his district.

McCLELLAN, George Brinton, major-general in the U. S. army, born in Philadelphia, Penn., Dec. 3, 1826. His father, Dr. George McClellan, was a distinguished physician and surgeon of that city. The son was educated at the university of Pennsylvania until he was 16 years old, and then entered the U. S. military academy, where he was graduated 2d in his class in 1846. He was brevetted 2d lieutenant of engineers, and immediately ordered to Mexico, where, as lieutenant of a company of sappers, miners, and pontoniers, he rendered the most valuable services. At the siege of Vera Cruz he was assigned to Gen. Worth's division, and was commended in the official reports. At Cerro Gordo and Mexico he was attached to the division of Gen. Twiggs, and, together with Lieutenants (now Generals) Beauregard and Foster, was specially commended for gallant conduct. At Contreras and Churubusco he won the brevet of 1st lieutenant, and at Molino del Rey that of captain, which he declined. He accepted a brevet however for gallant and meritorious conduct at Chapultepec, and the next year took command of the company of sappers, miners, and pontoniers, with which after the war he was ordered to West Point, as captain of field labors and instructor of the bayonet exercise. While thus employed he translated from the French a "Manual of Bayonet Exercise," which became the text book of the service. In 1851 he was ordered to Fort Delaware to superintend its construction under Major John Sanders. The next year he accompanied Capt. Randolph B. Marcy (now his father-in-law) on an expedition to explore the Red river, and in Sept. 1852, was ordered to accompany Gen. P. F. Smith as senior engineer to Texas, to survey the rivers and harbors of that state. The following April he reported for duty to the late Gen. Isaac I. Stevens, then governor of Washington territory, who had been placed in charge of the survey of the northern route for a Pacific railroad. Lieut. McClellan was detailed for the examination of the western part of the proposed line. Starting from Steilacoom, he explored the Yakima pass and various portions of the Cascade range, and the most direct route to Puget sound, his report forming the 1st volume of the "Pacific Railroad Surveys" published by the government. In his next official report, Jefferson Davis, then secretary of war, highly complimented him on the efficient manner in which he had performed this duty. He was almost immediately afterward detailed to investigate the railroad system of the United States, with a view to obtain all the necessary data on construction, equipment, and management for the successful operation of the Pacific railroad. Of the result of his proceedings he presented a full report in Nov. 1854. His next employment was a secret mission to the West Indies. He had received his commission as 1st lieutenant in 1853, and in March, 1854, he was promoted to be captain in the 1st cavalry. In the spring of 1855 he was sent with Majors Delafield and Mordecai to Europe to study the organization of European armies, and observe the war in the Crimea. He wrote one volume of the report of this commission, which was printed by order of congress. Capt. McClellan's portion was republished in Philadelphia under the title of "The Armies of Europe, comprising Descriptions in detail of the Military Systems of England, France, Russia, Prussia, Austria, and Sardinia" (8vo., 1861). He resigned his commission in Jan. 1857, and acted for 3 years as vice-president and engineer of the Illinois central railroad, at the end of which time he became general superintendent of the Ohio and Mississippi railroad, and two months later president of the eastern division of the same road. He still held this office when the civil war broke out in 1861. Tendering his resignation (which was not accepted, Gen. McClellan being still president of that railroad), he received a commission as major-general from the governor of Ohio, and proceeded to organize the 9 months' volunteers from that state. At the request of their respective governors, the states of Ohio, Indiana, and Illinois, and the western part of Pennsylvania, were united with western Virginia to form the department of the Ohio under Gen. McClellan's command. About June 1 his army began to cross the Ohio into western Virginia, and on the 3d two detachments under Cols. Dumont and Kelley defeated the enemy at Philippi. On the 18th Gen. McClellan himself left Cincinnati to take the field, and on July 10 came upon the confederates under Col. Pegram at Rich mountain. They were defeated by a force of about 3,000 men under Gen. Rosecrans, and compelled to surrender after an ineffectual attempt to form a junction with Gen. Garnett at Laurel hill. The latter officer was attacked by a division under Gen. T. A. Morris, and after a memorable pursuit was killed at the battle of Carrick's ford, July 11, and his whole command captured or routed. This victory was the decisive action of the campaign; the whole N. W. part of the state had been cleared of confederate troops in about 6 weeks, and the Wheeling legislature left free to organize a loyal government. On the night of July 22, the day following the battle of Bull run, Gen. McClellan was summoned to Washington to take command of the national troops on the Potomac. On Aug. 4 he was confirmed by the senate as major-general of the regular army, his commission dating from May 14. He continued in command of the army of the Potomac, organizing and disciplining his forces, until the retirement of Gen. Scott from active service, Nov. 1, when he was appointed general-in-chief of the armies of the United States. The forces made no important movement until March 6, 1862, when a general advance was ordered toward Manassas Junction.

The confederates, having evacuated that place, took up a line of defence behind the Rappahannock; but McClellan had planned an attack upon another quarter, and while his vanguard was making demonstrations upon the direct road to Richmond by way of Centreville and Manassas, his main body was embarked at Alexandria and transported to Fortress Monroe. Thence he advanced upon Yorktown, which was evacuated by the enemy May 4, after a siege of one month. In the mean time he had no sooner taken the field than he was relieved of all his commands except that of the army of the Potomac, and Gen. McDowell, whom he had instructed to follow him from Washington with 40,000 men, was placed over the department of the Rappahannock and ordered to Fredericsburg. One of McDowell's divisions, however, was sent to the peninsula, and with this assistance McClellan began his march from Yorktown to Richmond. After defeating the confederates at Williamsburg and Hanover Court House, his army took up a position along the Chickahominy, on the E. of Richmond, their lines reaching in some places within 4 or 5 miles of the city, and their base of supplies being on the extreme right, at the White House on the Pamunkey river. To protect such an extended line, in the face of an enemy who was continually drawing reënforcements from other quarters soon became impossible; and after a small body of confederate cavalry under Stuart had once made the complete circuit of his army, Gen. McClellan resolved to retreat to the James river. The supplies were accordingly shipped to that point, and on June 27 the retreat began. The whole of this difficult flank movement was a continuous battle, in which the national losses were not less than 15,000. On July 2 they reached a position of safety at Harrison's Landing on the James, where, protected by the gunboats, they remained until Aug. 24. In the mean time Gen. Halleck had been called to the chief command of the national armies, and immediately ordered Gen. McClellan to return to Yorktown and Fortress Monroe with his whole command. This retreat was accomplished without loss, Gen. Pope, at the head of the army of Virginia, effecting a diversion in McClellan's favor by a movement toward Richmond from the north. The largest part of the army of the Potomac was at once sent to assist Pope in the engagements between the Rappahannock and Washington, culminating in the second battle of Bull run, while McClellan himself was put in command of the fortifications of Washington and the troops for the defence of the capital. At the close of Gen. Pope's Virginia campaign he resumed his old command. On the invasion of Maryland by Gen. Lee he marched to attack him, and defeated him in the battle of Antietam, Sept. 17, following his retreating army as far as the Potomac. Here Gen. McClellan halted to await supplies of clothing and horses, during which time Stuart made a complete circuit of the army of the Potomac. On Oct. 28 Gen. Halleck wrote as follows to the secretary of war: "On the 1st of October, finding that he [Gen. McClellan] purposed to operate from Harper's Ferry, I urged him to cross the river at once and give battle to the enemy, pointing out to him the disadvantages of delaying till the autumn rains had swollen the Potomac and impaired the roads. On the 6th of October he was peremptorily ordered to 'cross the Potomac, and give battle to the enemy or drive him south. Your army *must* move now while the roads are good.' It will be observed that three weeks have elapsed since this order was given. In my opinion there has been no such want of supplies in the army under the command of Gen. McClellan as to prevent his compliance with the orders to advance against the enemy." A few days later a commission under the presidency of Major-Gen. David Hunter, appointed to investigate the circumstances connected with the surrender of Harper's Ferry to the confederates, Sept. 15, severely censured Gen. McClellan for failing to relieve or protect that place. On Nov. 7 he was relieved of his command, and ordered to Trenton, N. J. In the mean time he had crossed the Potomac, and the order reached him at Salem, Va. Turning over the command to his successor, Gen. Burnside, he took leave of his army, who showed him the strongest marks of affection and respect, and immediately repaired to Trenton, where he was received with many honors.—Beside the works previously mentioned, Gen. McClellan has written "Regulations and Instructions for the Field Service of the United States Cavalry in Time of War," and "European Cavalry, including Details of the Organization of the Cavalry Service among the principal Nations of Europe."

McCLERNAND, John Alexander, major-general of volunteers in the U. S. army, born in Breckenridge co., Ky., May 30, 1812. Upon the death of his father in 1816, his mother removed to Shawneetown, Ill., where the son worked on a farm. In 1829 he commenced the study of law, and in 1832 was admitted to the bar. The same year he volunteered in the war against the Sacs and Foxes, and on his return home was engaged for a time in trade (1833-'4), bad health unfitting him for professional pursuits. In 1835 he established the Shawneetown "Democrat," and resumed the practice of law. In 1836, 1840, and 1842, he was elected to the state legislature, and in 1843 became a representative in congress. His first speech was upon the bill to remit the fine imposed upon Gen. Jackson by Judge Hall. During the second session of the same congress he brought forward, as a member of the committee on public lands, a comprehensive report accompanied by a bill for a grant of land to aid in the completion of the Illinois and Michigan canal. In 1844, in consequence of a change of the usual time by an act of the legislature, another election for representatives in congress came on, and Mr.

McClernand was reëlected without opposition. In 1846 and 1848 he was again chosen. He was chairman of the committee on resolutions in the democratic state convention of 1858, which sustained the course of Senator Douglas on the Lecompton bill. In 1860 he was elected to congress from the Springfield district, and served until the breaking out of the civil war, when he resigned, returned to Illinois, and with Col. (now Brig. Gen.) J. A. Logan and Col. P. B. Fouke, both members of congress, raised the McClernand brigade. The president appointed him a brigadier-general, when he at once proceeded to Cairo. He accompanied Gen. Grant to Belmont, greatly distinguished himself at Fort Donelson, was made a major-general of volunteers, March 21, 1862, and was in command of a division at the battle of Shiloh. He served with the army of the Tennessee, under Major-Gen. Grant, until the autumn of 1862, when he was ordered to the command of a special expedition.

McCOOK, Alexander McDowell, major-general of volunteers in the U. S. army, born in Jefferson co., O., in 1823, was graduated at West Point in 1852 and appointed brevet 2d lieutenant in the 3d infantry; served with distinction against the Indians in New Mexico in 1857; was assistant instructor in infantry tactics at West Point in 1858; became 1st lieutenant in Dec. 1858, captain May 14, 1861, and colonel of the 1st Ohio volunteers in April, 1861; distinguished himself at the first battle of Bull run; was made brigadier-general of volunteers Sept. 3, 1861, and major-general July 17, 1862. He commanded the army corps engaged in the battle of Perryville, Oct. 8, 1862.—Robert L., brother of the preceding, brigadier-general of volunteers in the U. S. army, born in Jefferson co., O., in 1837, murdered near Salem, Ala., Aug. 5, 1862. He studied law and practised that profession at Columbus and Cincinnati, entered the service in 1861 as colonel of the 9th Ohio volunteers, served in western Virginia, where he commanded a brigade under Gen. Rosecrans, and especially distinguished himself at Rich mountain, Carnifex ferry, and the battle of Mill Spring in S. E. Kentucky, Jan. 19, 1862, and was made brigadier-general March 21, 1862. He commanded a division in Thomas's corps of Buell's army, and was murdered by guerillas as he was lying sick in an ambulance.

McCOWN, John Porter, a general in the service of the confederate states, born in Tennessee, was graduated at West Point in 1840 and appointed 2d lieutenant in the 4th artillery; became 1st lieutenant Sept. 30, 1843, and was regimental quartermaster in 1847-'8; was brevetted captain for gallantry at Cerro Gordo, April 18, 1847; became captain in Jan. 1851; resigned May 17, 1861, and became a brigadier-general in the confederate army. He commanded at New Madrid, Mo., in March, 1862, which he evacuated after the investment by Gen. Pope on the night of the 13th.

McCULLOCH, Ben, a general in the service of the confederate states, born in Rutherford co., Tenn., in 1814, killed in the battle of Pea ridge, March 7, 1862. He emigrated to Texas, fought at the battle of San Jacinto as a private in the Texan artillery corps, and was a captain of rangers in the Mexican war. He distinguished himself at Monterey; was made a quartermaster with the rank of major July 16, 1846, and retained that office till Sept. 6, 1847, having meanwhile commanded a spy company which reconnoitred the position of the Mexicans before the battle of Buena Vista, and having gained new distinction by gallantry in that battle; was appointed marshal of Texas by President Pierce in April, 1853; declined the appointment of major in the 1st cavalry, March 3, 1855; and was appointed by President Buchanan a commissioner to adjust the difficulties with the Mormons in Utah in May, 1857. Long known as desiring the overthrow of the U. S. government, he was in Washington about the time of the inauguration of President Lincoln, as was believed with the intention of getting possession of that city by a sudden attack at the head of a force of secessionists, and preparations were made to resist him, April 10, 1861; but no such attack was made. Appointed a brigadier-general of the forces of Arkansas, he issued in June, 1861, a proclamation calling on the people of Arkansas to assemble at Fayetteville to defend the state from invasion coming from Missouri. He commanded in the battle of Wilson's creek, Mo., Aug. 10, 1861, where Gen. Lyon was killed; but after that battle surrendered the chief authority in Missouri to Gen. Sterling Price, while Gen. Van Dorn, of the confederate army, commanded the trans-Mississippi department, and directed the battle of Pea ridge, where McCulloch led a corps of Arkansas, Louisiana, and Texas troops. He fell on the second day of the battle.

McDOWELL, a village in Highland co., Va., between Monterey and Staunton, where was fought an action between the national and confederate troops, May 8, 1862. On the morning of that day a body of troops belonging to the corps of Gen. Fremont, and commanded by Gen. Milroy, reached McDowell on the way to Staunton. Three regiments considerably in advance of the main body were attacked at noon by the confederates under Jackson, and driven back to within 1½ miles of McDowell, where about 6 P. M. they made a stand, and were joined by the remainder of the force, and by the brigade of Gen. Schenck, which had marched from Franklin. A general engagement ensued, the enemy, stationed along an elevated plateau, having the advantage of position and numbers, and the national forces being superior in artillery. No material advantage occurred to either side until about 9 o'clock in the evening, when the enemy by a flank movement on the Union left compelled Milroy and Schenck to order a retreat. This was effected with little loss, and by the next day the Union army had fallen back to Franklin, in Pendleton co., where they made a stand, and were soon after joined by Blenker's division and other troops of Fremont's command. Their total loss at McDowell did not exceed 400 men, while that of the enemy, from their lack of artillery, is supposed to have been much greater. The national troops also lost some baggage and stores, which had been left at Monterey.

McDOWELL, Irvin, major-general of volunteers and brigadier-general in the U. S. regular army, born in Franklin co., Ohio, Oct. 15, 1818. He received part of his education at a military school in France, and was graduated at West Point in 1838 and appointed brevet 2d lieutenant in the 1st artillery. For a short time in 1841 he was assistant instructor of infantry tactics at West Point, and was then adjutant on the academic staff until 1845. In 1842 he became 1st lieutenant. On being relieved from duty at the military academy, he was appointed aide-de-camp to Gen. Wool, whom he accompanied to Mexico, and at the battle of Buena Vista won the brevet of captain. In May, 1847, he became assistant adjutant-general with the rank of captain. He relinquished his rank in the line in 1851, was promoted to be major in 1856, and on May 14, 1861, was appointed brigadier-general in the regular army. Two weeks afterward he took command of the department of N. E. Virginia. He commanded at the first battle of Bull run, July 21, and after the appointment of Gen. McClellan to the command of the army of the Potomac was placed in charge of a division under him. In March, 1862, on the division of the army into corps, he was assigned the 2d corps, was appointed major-general of volunteers March 14, and early the next month, immediately after the departure of Gen. McClellan for Yorktown, his corps was detached from the army of the Potomac, and he was placed in command of the department of the Rappahannock. He immediately occupied Fredericsburg, and remained there until the retreat of Gen. Banks down the valley of the Shenandoah, when he was recalled to take part in the vain pursuit of "Stonewall" Jackson. On June 26 his command was consolidated with those of Fremont and Banks to form the army of Virginia under Maj. Gen. Pope, Gen. McDowell's forces being styled the 3d corps. He took a prominent part in the campaign between the Rappahannock and Washington, and was highly commended in Gen. Pope's official report, but was relieved at his own request, and demanded a court of inquiry for the examination of certain charges made against him unofficially. This court is now sitting (Dec. 1862).

MACKALL, William Whann, a general in the service of the confederate states, born in the District of Columbia about 1818, was graduated at West Point in 1837, and appointed 2d lieutenant in the 1st artillery; became 1st lieutenant July 9,1838, adjutant of his regiment in 1840, and assistant adjutant-general, with the rank of captain, Dec. 29, 1846; was brevetted captain for gallantry at Monterey, Sept. 23, 1846; became captain, Aug. 20, 1847; was brevetted major for gallantry at Contreras and Churubusco, Aug. 20, and was wounded at Chapultepec, Sept. 13, 1847; was additional secretary and treasurer of the military asylum in the District of Columbia from May, 1851, to June, 1853; became assistant adjutant-general, with the rank of major, Aug. 5, 1853; declined promotion to a lieutenant-colonelcy, May 11, 1861, and resigned his commission July 3. He was assistant adjutant-general to Gen. Buckner in Kentucky, with the rank of colonel, until after the surrender of Forts Henry and Donelson; was afterward appointed a brigadier-general in the confederate army, commanded at Island No. Ten at the time of its surrender, and was confined in Fort Warren until exchanged.

McKEAN, Thomas Jefferson, brigadier-general of volunteers in the U. S. army, born in Burlington, Bradford co., Penn., Aug. 21, 1810. He was graduated at West Point in 1831, and commissioned 2d lieutenant in the 4th infantry, resigned in 1834 and engaged in civil engineering, but was adjutant of a regiment of Pennsylvania volunteers in the Florida war in 1837–'8. In 1840 he removed to Iowa, and was a member of the convention to frame the constitution of that state in 1844. Failing to obtain a commission, he served as a private in an Iowa volunteer regiment in the Mexican war, and was promoted for bravery to be brevet 2d lieutenaut in the 1st dragoons, but declined the appointment, and returned to his occupation as a civil engineer. In June, 1861, he was made paymaster in the U. S. army, and on Nov. 21 brigadier-general of volunteers. He has since commanded in central Missouri, and under Gen. Grant in Tennessee.

MACKENZIE, William Lyon, a Canadian journalist and politician, born in Dundee, Scotland, in 1794, died in Toronto, C. W., Aug. 28, 1861. He received in early life a good English education, and followed the occupation of a weaver, but emigrated to Canada about 1825, became connected with the press, and was chosen a member of the colonial legislature. He attacked the government so unsparingly, on account of the too free exercise of his prerogative by the governor-general and the refusal of the colonial office to allow the Canadians the control of their own affairs, that Sir F. B. Head, then governor-general, interfered in 1836 in the election of the county of York, and procured his defeat as a candidate for reelection to the provincial parliament. This intensified the hostility of his party to the government, and with other grievances led to the rebellion of Dec. 1837. Abandoning his paper, the "Constitution," and gathering a small body of followers, Mackenzie appeared in arms on Yonge street within a few miles of Toronto, and demanded from the governor his consent to the settlement of the provincial difficulties by a convention; this was refused. His approach excited so much consternation, that had he marched at once upon the city he might easily have captured it; but the favorable moment passed, and the government was soon in a position to assume the offensive. The insurgents fled without striking a blow, and Mackenzie for several months after this time, in connection with a considerable body of American sympathizers, maintained a position of hostility to the Canadian government on Navy island in the Niagara river, whence he issued a proclamation offering $100 and 300 acres of land to volunteers. Through the exertions of Gen. Scott, this camp of insurgents was broken up, and Mr. Mackenzie was taken prisoner and tried at Rochester for a breach of the neutrality laws, and sentenced to imprisonment for 12 months in the Rochester gaol. He had previously been outlawed by the Canadian government. On his discharge he sought employment in the United States in connection with the press. In 1844, and for 5 or 6 years subsequently, he was employed as a contributor to the "New York Tribune," and published some political pamphlets during that period. Among these was one compiled from papers found in the custom house, where he was also for a time employed, which, professedly exposing the intrigues of several prominent political leaders, created much excitement. On the proclamation of an amnesty in 1849, he returned to Canada, and was almost immediately elected to the provincial parliament. His rigid honesty and opposition to governmental extravagance won him many friends, and his admirers raised a sum sufficient to purchase him a small annuity and a residence near Toronto.

McKINSTRY, Justus, an officer of the U. S. army, born in New York about 1821, was appointed a cadet from Michigan, and was graduated at West Point in 1838 and appointed 2d lieutenant in the 2d infantry; became 1st lieutenant April 18, 1841, and assistant quartermaster, with the rank of captain, March 3, 1847; commanded a company of volunteers at Contreras and Churubusco, and was brevetted major for gallantry in that battle; distinguished himself at Chapultepec; became captain in Jan. 1848, and relinquished his rank in the line; became quartermaster, with the rank of major, Aug. 3, 1861, and having been for some time stationed at St. Louis, was attached to the staff of Maj. Gen. Fremont when he took command there. Appointed to the office of provost marshal of St. Louis, he combined its duties with those of quartermaster of the department, exhibiting remarkable energy in their discharge. Nominated brigadier-general of volunteers, he took the field as commander of a division when Gen. Fremont marched his army to Springfield. Accused by a committee of the house of representatives, of which the Hon. C. H. Van Wyck of New York was chairman, of dishonesty in his transactions as quartermaster, he was arrested, Nov. 11, 1861, by Gen. Hunter, Fremont's successor, brought to St. Louis, and by order of Gen. McClellan, then general-in-chief, kept for several months in close confinement in the arsenal of St. Louis, and denied access of counsel and permission to see his clerk and papers. The rigor of his imprisonment was mitigated Feb. 28, 1862, by allowing him to see counsel, and finally in May he was released on parole, but required to remain in St. Louis. A court martial to try him met at that place in October, first under the presidency of Gen. Harney, and afterward under that of Gen. Philip St. George Cooke.

McLAWS, Lafayette, a general in the service of the confederate states, born in Georgia, was graduated at West Point in 1842, and appointed brevet 2d lieutenant in the 6th infantry; became 2d lieutenant in the 7th infantry March 16, 1844, 1st lieutenant Feb. 16, 1847, and captain in Aug. 1851; and resigned March 23, 1861. He is now (Dec. 1862) a brigadier-general in the confederate army.

McPHERSON, James B., major-general of volunteers in the U. S. army, born in Sandusky co., O., in Nov. 1828. He was graduated at West Point first in his class in June, 1853, and commissioned brevet 2d lieutenant in the corps of engineers. From July, 1853, to Sept. 1854, he was assistant instructor of practical military engineering at West Point, and was engaged on the defences of New York harbor and the improvements of the Hudson river below Albany from Sept. 1854, until Jan. 1857. He became full 2d lieutenant in Dec. 1855, was charged with the construction of Fort Delaware in the early part of 1857, and with that of the fortifications on Alcatraz island, San Francisco bay, together with military surveys, from Jan. 1858, until Aug. 1861. In 1858 he was made 1st lieutenant of engineers, promoted to be captain Aug. 6, 1861, and put in charge of the defences of Boston harbor from that date until November of the same year. He was appointed aide-de-camp to Gen. Halleck with the rank of lieutenant-colonel, Nov. 12, 1861, and was chief engineer of the army of the Tennessee in the expeditions against Forts Henry and Donelson, in the operations up the Tennessee river, and in the battle of Shiloh. In May, 1862, he was again appointed aide-de-camp to Gen. Halleck with the rank of colonel, and served on his staff during the operations in the vicinity of Corinth. He was nominated brigadier-general of volunteers in May, and appointed general superintendent of military railroads in the district of West Tennessee in the following June. In October he was promoted to be major-general of volunteers for meritorious services in the West, and with his troops reached Corinth Oct. 4, after the close of the battle, and led in the pursuit of the confederates on the following day.

MAGRUDER, John Bankhead, a general in the service of the confederate states, born in Virginia about 1811, was graduated at West Point in 1830 and appointed brevet 2d lieutenant in the 7th infantry; became 2d lieutenant in the 1st artillery in Aug. 1831, assistant commissary of subsistence in Dec. 1835, 1st lieutenant in March, 1836, and captain in June, 1846; in 1847 was brevetted major for gallantry at Cerro Gordo, and lieutenant-colonel for gallantry at Chapultepec, where he was wounded. On the breaking out of the civil war in 1861, he was in Europe on leave of absence, but returned home, resigned his commission April 20, was appointed a colonel in the army of Virginia, and took command at Yorktown, where he remained till the retreat of the confederates from that place, May 3, 1862, having been made in the mean time successively a brigadier-general and major-general in the confederate service. He took part in the battles of the Chickahominy campaign, and at the battle of Malvern hills especially was distinguished by forcing his troops upon the national artillery, which slaughtered them in great numbers. For this act he was in disgrace for a time, but on Oct. 16, 1862, was placed in command of the confederate forces in Texas, Arizona, and New Mexico.

MALLORY, Stephen R., secretary of the navy in the government of the confederate states, born in the island of Trinidad in 1810, the son of a sea captain of Bridgeport, Conn., who traded to the West Indies, and whose wife accompanied him on his voyages. His father died in 1821, while at Key West with his vessel, and there the wife and son, who were with him at the time, remained. The mother, who was a Roman Catholic and who trained her son in that faith, being possessed of a moderate property, opened a hotel there, and sent her son to New York and Connecticut to be educated. Returning to Key West, he studied law there, was admitted to the bar in 1833, was appointed by President Jackson inspector of the customs at Key West, became under the territorial government county judge for Monroe co. and judge of probate, was appointed in 1845 by President Polk to the lucrative office of collector of Key West, and in 1850 was chosen to the U. S. senate, his term of office extending from March 4, 1851, to March 4, 1857. He was elected to this office by a majority of one vote in opposition to David L. Yulee, his predecessor in the office. Yulee was the candidate selected by the caucus of the democratic members of the legislature, but Mallory was elected by a combination of dissatisfied democrats and whigs, several democrats casting blank ballots. The election was contested by Mr. Yulee on the ground that the constitution of Florida required the choice to be made by a majority of the members of the legislature, and that if the blank ballots were counted Mr. Mallory had not such a majority. The senate unanimously decided that the election was valid. While in the senate Mr. Mallory was for several years chairman of the committee on naval affairs, and throughout his senatorial career was a constant adherent of the democratic party. He, with his colleague, Mr. Yulee, withdrew from the senate, Jan. 21, 1861, the secession of Florida having been declared Jan. 7 previous. On the organization of a navy department in the confederate government, he was appointed secretary of the navy, and still (Dec. 1862) holds that office. He is married to a daughter of Señor Moreno of Pensacola, one of the wealthiest of the old Spanish inhabitants of Florida.

MALVERN HILLS. See Chickahominy.

MANSFIELD, Joseph King Fenno, brigadier-general in the U. S. army, born in New Haven, Conn., Dec. 22, 1803, killed at the battle of Antietam, Sept. 17, 1862. He was graduated at West Point in 1822, the second in his class, and appointed brevet 2d lieutenant in the engineer corps. For the next two years he was employed as assistant to the board of engineers, then engaged in planning fortifications for the defence of the harbors and cities on the coast. From 1826 to 1828 he acted as assistant engineer in the construction of Fort Hamilton, and from 1828 to 1830 was engaged in the same capacity under Gen. Gratiot at Fortress Monroe and Fort Calhoun. In 1832 he was promoted to be 1st lieutenant, and from that time until 1838 was engaged upon the construction of Fort Pulaski, though often detached to duty at Charleston harbor, Cape Fear river, and other posts. He was made captain in 1838. During the Mexican war he served under Gen. Taylor as chief engineer, and was brevetted major for his conduct in the defence of Fort Brown, lieutenant-colonel for gallantry at the storming of Monterey, where he was severely wounded, and colonel for his services at Buena Vista. In 1853 he was made inspector-general with the rank of colonel, which appointment he held at the commencement of the civil war. He was brevetted a brigadier-general in the regular army, May 6, 1861, and commissioned a full brigadier-general on the 14th of the same month. From May, 1861, to the following August, he had command of the department of Washington, and for a short time of the department of Virginia. On the return of Gen. Wool to Fortress Monroe, Gen. Mansfield was sent to Cape Hatteras, afterward to Camp Hamilton, and then to Newport News. After the destruction of the Merrimac and the occupation of Norfolk, he was assigned to the command of Suffolk, Va. After the second battle of Bull run he was summoned to Washington as a member of a court of inquiry into the circumstances of that battle; but making application for active service, he was ordered to report to Gen. McClellan, and given command of the corps previously under Gen. Banks. At the battle of Antietam, early in the day, he was mortally wounded while cheering on his troops in a brilliant charge, and died shortly after he was carried from the field.

MANSON, Mahlon Dickerson, brigadier-general of volunteers in the U. S. army, born in Ohio, removed to Indiana while young, served during the Mexican war as captain in the 5th Indiana volunteers, Col. James H. Lane, was a member of the state legislature for one session, and in the spring of 1861 was chosen colonel of the 10th Indiana volunteers. He commanded a brigade at the battle of Mill Spring, and was commissioned brigadier-general of volunteers March 24, 1862. He was placed under Maj. Gen. Nelson's command, and stationed at Richmond, Ky., where on Aug. 30 he was attacked and defeated by a superior force of the enemy.

MARCY, Randolph B., brigadier-general of volunteers in the U. S. army, born in Massachusetts, was graduated at West Point in 1832 and appointed brevet 2d lieutenant in the 4th infantry; became 2d lieutenant Nov. 25, 1835, 1st lieutenant June 22, 1837, assistant commissary of subsistence in April, 1838, and captain May 18, 1846; served in the expedition to Utah under Gen. A. S. Johnston in 1857-'8; commanded a detachment sent to New Mexico to procure supplies in Nov. 1857, and was absent till March, 1858, during which time his party suffered exceedingly from the severity of the weather, and were obliged to feed upon their mules; became paymaster, with the rank of major, Aug. 22, 1859; was appointed inspector-general, with the rank of colonel, Aug. 9, 1861; was attached as chief of staff to the army of the Potomac under Gen. McClellan (his son-in-law), and nominated brigadier-general of volunteers, Sept. 23, 1861, but as the senate did not confirm the nomination, it expired by constitutional limitation, July 17, 1862. It was however renewed by the president in Sept. 1862. Gen. Marcy was attached to the staff of Gen. McClellan during his campaigns in eastern Virginia and Maryland.

MARSH, Catharine, an English authoress, born in Colchester about 1815. She has for many years devoted herself to the interests of the working classes, and her writings consist chiefly of religious tales designed for their improvement, and have been very widely circulated. Her best known productions are "English Hearts and English Hands," "Memorials of Captain Hedley Vicars," and "Light for the Line, or the Story of Thomas Ward, a Railway Workman," of the last of which 126,000 copies had been sold at the beginning of 1862. At Beckenham, Kent, the place of her residence, she has organized schools and an institute for the railway laborers.

MARTIN, Theodore, a British author, born in Edinburgh in 1816. He was educated at the high school and university of his native city, studied law, practised his profession for several years in Edinburgh, and in 1846 removed to London, where he has ever since employed himself as a parliamentary solicitor. His first important publication was the "Book of Ballads, by Bon Gaultier," a series of burlesque pieces and parodies, written originally for various periodicals in conjunction with Professor W. E. Aytoun. He was associated with the same gentleman in a translation of the "Poems and Ballads of Goethe" (1858), and has also translated the *Correggio* and *Aladdin* of Oehlenschläger; "King René's Daughter," a lyrical drama by the Danish poet Henrik Hartz, which has been represented on the stage; "The Odes of Horace," in English verse (1860); "The Poems of Catullus," in English verse, with an introduction and notes (1861); and Dante's *Vita nuova* (1862). He married Miss Helen Faucitt the actress.

MARTINDALE, John Henry, brigadier-general of volunteers in the U. S. army, born at Sandy Hill, Washington co., N. Y., March 20, 1815. He was graduated at West Point in 1835 as third in his class, and commissioned brevet 2d lieutenant of artillery, but at his own request was transferred to the 1st dragoons. In 1836 he resigned his commission, became a civil engineer, afterward studied law with his father, and practised successively at Batavia and Rochester. He was commissioned brigadier-general of volunteers Aug. 9, 1861, and assigned a command near Washington. He accompanied Gen. McClellan to Yorktown, and was in all the battles of the campaign before Richmond, his brigade forming part of the 5th army corps, under Gen. Fitz John Porter. After the retreat to James river he was for awhile absent from duty on account of sickness, and on his recovery charges of misconduct at the battle of Malvern hills were preferred against him, and investigated (Oct. 1862) by a court of inquiry, which fully acquitted him.

MASON, Francis, D.D., an American clergyman and missionary, born in York, England, April 2, 1799. He was apprenticed to a shoemaker, and at the age of 19 emigrated to Philadelphia, where an uncle had offered him a home. The uncle dying soon after his arrival, he led a wandering and aimless life for several years. In 1825 he settled at Canton, Mass., joined the Baptist church, entered the theological seminary at Newton, Mass., in 1827, and in May, 1830, having been ordained, sailed with his wife for Calcutta as a missionary of the board of the triennial Baptist convention (afterward the American Baptist missionary union) to the Karens. At Calcutta he acquired the Burmese and Karen languages, being the first missionary who ever attempted to preach in the latter, as well as the author of the first book written in the language, "The Sayings of the Elders." He prepared Pali and Burmese grammars, which the Asiatic society ordered to be published at their expense, and acquired the Sanscrit, Talaing, Siamese, Chinese, Syriac, Hebrew, Chaldee, Arabic, and German languages. In 1853 he published his translation into Karen of the whole Bible, the New Testament having already been 3 times revised, and being regarded as the best specimen of Karen literature extant. Having published the Scriptures and other books in two dialects of the Karen language, the Pwo and Sgau, he reduced to writing a third, the Bghai, and translated the whole of the New Testament and several books of the Old, as well as several other books, into this. Having nearly 25,000 of the Karens dependent upon him for medical advice, he early commenced the study of medicine, and published a small work on materia medica and pathology in one of the Karen dialects. He has also cultivated the natural sciences, and his contributions on the geology, botany, and natural history of southern Burmah, to the Boston natural history society and the New York lyceum of natural history, have been of great interest and importance. He has also edited for 20 years the "Morning Star," a Karen monthly magazine, a part of the time in both the Sgau and Pwo dialects. In 1853 Brown university conferred on him the degree of D.D., and he has been elected a member of the royal Asiatic society, London, the American oriental society, the Boston natural history society, and the New York lyceum of natural history. Dr. Mason's publications in English are: "Report of the Tavoy Mission Society;" "Life of Ko-tha-byn," published first in Burmah, and afterward in Boston under the title of "The Karen Apostle," and still later in London, and also translated into German; "Memoir of Mrs. Helen M. Mason" (New York, 1847); "Memoir of San-Quala" (Boston, 1850); and "Burmah, its People and Natural Productions" (Maulmain, 1852; new and enlarged ed., Rangoon, 1861).

MAYSVILLE, Battle of. See Pea Ridge.

MEADE, George G., brigadier-general of volunteers in the U. S. army, born in Spain in 1816, entered the military academy at West Point from the District of Columbia, and was graduated there in 1839 and appointed 2d lieutenant in the 3d artillery; resigned his commission Oct. 26, 1836; was appointed 2d lieutenant in the topographical engineers, May 19, 1842; was brevetted 1st lieutenant for gallantry at Monterey in 1846; became 1st lieutenant in Aug. 1851, captain May 19, 1856, major in June, 1862, and brigadier-general of volunteers Aug. 31, 1861. He commanded a brigade in McCall's division of Pennsylvania reserves in the army of the Potomac until Sept. 1862, when he took command of a division in the army corps under Gen. Reynolds. He was severely wounded in the battle of White Oak swamp, June 30, 1862.

MEAGHER, Thomas Francis, brigadier-general of volunteers in the U. S. army, born in Waterford, Ireland, Aug. 3, 1823. He was educated first at the Jesuit college of Clongowes, county Kildare, and afterward at Stonyhurst college near Preston, England. Leaving the latter in 1843, he took a prominent part in Irish politics, and in 1846 was one of the leaders of the "Young Ireland" party, which seceded from the followers of O'Connell and organized the "Irish confederation." His oratorical powers made him a great favorite with his party, and in 1848 he was one of the delegates sent to congratulate the French republic. On his return he was arrested for sedition, and held to bail. Meanwhile the treason-felony act was passed by parliament, and the leaders, after the banishment of Mitchel, being precluded from addressing meetings in the cities, were compelled to throw themselves on the country districts. Charges of treason were now made against them; and among others a reward of £300 was offered for Meagher. After many adventures he was finally captured near Rathgannon, between Clonoulty and Holy Cross, in August. He was tried in Clonmel in October, found guilty, and sentenced to death; on which occasion he made a memorable speech. The sentence was subsequently commuted to banishment for life to Van Diemen's Land, from which he escaped and landed in New York in May, 1852. He lectured with great success throughout the country, and in 1854 visited California. On his return he studied law and entered upon its practice. In 1856 he edited the "Irish News," a weekly journal, in the following year visited Central America, and subsequently made a more protracted visit to Nicaragua and Costa Rica. In 1861 he raised a company and joined the 69th regiment New York state militia, under Col. Corcoran, and served with gallantry throughout the first campaign on the Potomac. Acting as major at Bull run, he had his horse shot under him. After the return of the regiment he raised an Irish brigade, and was commissioned brigadier-general of volunteers, Feb. 3, 1862. He was attached to the army corps of Gen. Sumner during the battles before Richmond, and in the battle of Antietam his brigade fought in Gen. Richardson's division of that corps. He is now (Dec. 1862) attached to Gen. Couch's corps, and was wounded in the battle of Fredericsburg, Dec. 13, 1862.

MEIGS, Montgomery Cunningham, quartermaster-general of the U. S. army, born in Georgia about 1816, was appointed a cadet from Pennsylvania, and was graduated at West Point in 1836 and appointed 2d lieutenant in the 1st artillery; was transferred Nov. 1, 1836, to the engineers; was once more transferred to the artillery and again to the engineers in Oct. 1837; became 1st lieutenant July 7, 1838; was appointed to superintend the new buildings for the extension of the capitol at Washington in Nov. 1852; became captain in March, 1853, and added to his other duties those of superintendent of the Washington aqueduct in Nov. 1858; was dismissed from these employments by Secretary Floyd in 1859, but was appointed by President Lincoln quartermaster-general, with the rank of brigadier-general in the regular army, May 15, 1861.

MEMPHIS, Battle of, a naval action fought June 6, 1862. After the evacuation of Fort Wright (see Fort Wright), the Union fleet, including 5 iron-clad gunboats under command of Capt. Charles H. Davis (the Benton, Carondelet, St. Louis, Louisville, and Cairo), and a flotilla of steam rams commanded by Col. Charles Ellet, jr., including the Monarch, Queen of the West, Lioness, Switzerland, Mingo, Lancaster No. 3, Fulton, Hornet, and Samson, proceeded down the river to a point near Memphis.

The confederate fleet, commanded by Capt. Edward Montgomery, comprised the Van Dorn, General Price, General Bragg, General Lovell, Little Rebel, Jeff. Thompson, Sumter, and General Beauregard; they were gunboats strengthened for use as rams. At 5½ A. M. on the 6th the confederate fleet, then lying under the Arkansas shore, opposite the city of Memphis, moved out into the stream to meet the Union squadron, forming a line across the river, and a brisk fire was soon opened, in which the confederate fleet and the Union gunboats alone were engaged; this had continued but a short time when the Union rams, the Queen of the West and the Monarch, came into the contest, they being the only members of the ram fleet engaged during the fight, and at their appearance the Union gunboats ceased firing for the time. The Queen of the West struck directly at the Beauregard, missed her, and delivered her blow upon the General Price, inflicting so serious an injury that the latter floated ashore and was captured. At the instant of striking the General Price, however, the Queen of the West herself received a severe blow from the Beauregard, and was in her turn disabled, floating down stream. Meanwhile the Monarch had assaulted the General Lovell, crushing in the latter's sides at a blow, and causing her to sink at once; though many of her crew were saved by the Union boats, it is supposed that at least 50 were drowned. The Monarch then attacked and sunk the Beauregard, after which she passed out of the battle, going down the river to aid the disabled Queen of the West. Thereupon the Union gunboats again opened fire; a shot from the Cairo disabled the Little Rebel, which drifted ashore and was captured; the pilot of the Sumter became frightened and ran his vessel ashore, leaving her to be captured; the Jeff. Thompson, struck by two shots, drifted down the river and was set on fire by her crew, her magazine and boilers exploding; the General Bragg engaged in a fierce encounter with the Union gunboat Benton, and was so severely injured that her crew set fire to and abandoned her, but the flames were extinguished and she was captured; the last of the confederate fleet, the Van Dorn, escaped down the river; and thus the battle ended, after lasting an hour and 15 minutes. The city was at once surrendered. Col. Ellet, in command of the ram fleet, was mortally wounded; there was no other casualty on the Union side.

MILFORD, a place in Johnson co., Mo., a few miles N. of Warrensburg, which was the scene of a slight skirmish between the confederates of Price's army and the Union troops under Gen. Pope on Dec. 18, 1861; the affair was chiefly important for the number of prisoners taken, and for the embarrassment caused to Gen. Price. The latter, with his principal force, was at or near Osceola, on the Osage river, and a large number of recruits with a considerable quantity of supplies were on their way from the Mississippi river to join him. In order to cut off these, Gen. Pope started from Sedalia on Dec. 15, with a force of 4,000 men, and made rapid marches in the direction of Warrensburg; on the 16th a body of the confederates, 2,000 strong, were pursued by 10 companies of cavalry and a section of artillery till midnight, at which time they had diminished to 500, one entire cavalry company, with tents, baggage, and wagons, having been captured; they then scattered in various directions, and were seen no more. The Union detachment which had accomplished this result having rejoined the main command of Gen. Pope, the march was continued toward Warrensburg; when near that town it was reported that a large force of the confederates were moving from a point N. E. of it, and that they would encamp at Milford, on a fork of Blackwater creek. Late in the afternoon of the 18th the advance of Gen. Pope, 8 companies of cavalry and a section of artillery, came upon the confederates, on the Blackwater opposite the mouth of Clear creek; the stream was only to be crossed by a long and narrow bridge, which they held. Two companies of U. S. cavalry charged upon it, drove back the force holding it, and, followed by the rest of the troops, formed on the opposite side; an attack was then made in front, while a portion of the cavalry advanced upon the flank and rear. Thus cut off, the confederates fired one volley and then surrendered. Their fire killed one Union soldier and wounded 8. The force surrendered consisted of 1,300 men, including 3 colonels, a lieutenant-colonel, a major, and 51 commissioned officers; the property captured comprised 500 horses and mules, 73 wagons heavily loaded with powder, a quantity of lead, tents, subsistence stores, and 1,000 stand of arms.

MILL SPRING, a post village of Wayne co., Ky., about 15 m. S. W. of Somerset, Pulaski co., near which a battle was fought Jan. 19, 1862, between the Union forces under Gen. G. H. Thomas and the confederates under Gens. Zollicoffer and G. B. Crittenden. Zollicoffer, with about 12,000 men, was in an intrenched camp on the Cumberland river near Mill Spring, and hearing that the Union force before him was divided between Columbia and Somerset, he determined to attack the Columbia division by itself, inasmuch as he was then cut off from all means of obtaining supplies by the Cumberland river. Accordingly, on Jan. 19, he ordered an advance upon the Union lines, where Gen. Thomas had only about 5,000 men. A sharp fight was kept up for an hour, at the expiration of which time a dashing charge turned the confederate flank, and sent the whole force retreating to their intrenchments, whither the Union troops followed. A bombardment of the confederate position was then kept up till dark, and preparations were made for a general assault the next morning; before day broke, however, the works were evacuated in haste, and Gen. Thomas took possession of them. Among the property captured were 12 pieces of artillery with caissons full of ammunition, a battery wagon and 2 forges, 150 wagons, 1,000 horses and mules, and a great quantity of camp equipage. During the battle of the 19th Gen. Zollicoffer and 190 others of the confederates were killed, and 151 wounded. The Union loss was 39 killed and 207 wounded.

MILROY, Robert H., brigadier-general of volunteers in the U. S. army, born in Indiana about 1814. He studied law, was admitted to the bar, and during the Mexican war served as captain in the 1st Indiana volunteers. He entered the service in 1861 as a brigadier-general of Indiana volunteers, was a valuable officer in western Virginia under McClellan and Rosecrans, commanded the forces engaged at Carrick's ford, and was appointed brigadier-general of volunteers Sept. 3, 1861. He served subsequently under Fremont and Sigel, and took part in the second battle of Bull run.

MITCHELL, Robert B., brigadier-general of volunteers in the U. S. army, born in Ohio about 1825. He was educated at Washington college, Penn., studied law, and was admitted to the bar. In 1847 he enlisted in a regiment of Ohio volunteers for the Mexican war, and rose to be 1st lieutenant. On the conclusion of peace he resumed his profession, and in 1857 removed to Kansas, where he took an active part with the free state men in their struggle with the pro-slavery party. He was a member of the territorial legislature in 1857–'8, and treasurer of the territory from 1858 to 1861. When the civil war commenced he became colonel of the 2d Kansas volunteers, was severely wounded at the battle of Wilson's creek, and shortly afterward, his regiment having been disbanded, raised a regiment of cavalry. He was commissioned brigadier-general of volunteers April 8, 1862, and ordered to Tennessee, where he was afterward placed in command of the 13th division of Gen. Buell's army.

MONTGOMERY, William R., brigadier-general of volunteers in the U. S. army, born in New Jersey, was graduated at West Point in 1825 as brevet 2d lieutenant in the 3d infantry, was promoted to be 2d lieutenant in 1826, and 1st lieutenant in 1833. He performed the duties of disbursing officer at the removal of the Choctaw Indians from Mississippi to their reservation, was made captain in the 8th infantry in 1838, and served on the northern frontier during the troubles in Canada. In 1840 he was ordered to Fort Winnebago, and thence to Florida, where he served in the Seminole war. In the Mexican war he was distinguished at the battles of Palo Alto and Resaca de la Palma, in the latter of which he was wounded, and won the brevet of major. He served under Gen. Scott at Vera Cruz, Cerro Gordo, Churubusco, and Molino del Rey, where he was again wounded, and was brevetted colonel for gallant and meritorious conduct. He succeeded to the command of the 8th infantry, which he led at Chapultepec and the taking of the city of Mexico. After the war he was promoted to be major in the 2d infantry, and proceeded with part of that regiment to Fort Riley in Kansas, about the time of the organization of that territory. Although the course he there pursued was one of strict impartiality, his personal feelings were in favor of the free state men, and Jefferson Davis, then secretary of war, caused his dismissal from the army in Dec. 1855. In 1861 he was placed in command of the 1st regiment New Jersey volunteers, and just before the first battle of Bull run was in command at Vienna, Va., from which place on the day of the battle he was ordered to join Gen. McDowell; but on his way he met the retreating national army, and covered their rear. He was appointed brigadier-general of volunters May 17, 1861, and made military governor of Alexandria. In 1862 he was made military commandant of Philadelphia.

MORELL, George W., major-general of volunteers in the U. S. army, born at Cooperstown, Otsego co., N. Y. He was graduated at West Point, first in his class, in 1835, appointed 2d lieutenant of engineers, and was for 16 months stationed at Fort Adams, Newport, R. I., under Col. (now Gen.) Joseph G. Totten. He resigned his commission in 1837, became a civil engineer, and was engaged on several railroad lines in North and South Carolina and Michigan until 1840, when he removed to New York city, studied law, and was admitted to the bar. From 1849 to 1861 he served on the staff of Maj. Gen. Sanford, of the New York state militia, as division engineer, and afterward as division inspector. He accompanied Gen. Sanford to the Potomac as division inspector and chief of staff, with the rank of colonel, in May, 1861, and on Aug. 9 was appointed brigadier-general of volunteers. He was assigned to Gen. Fitz John Porter's division in the army of the Potomac; participated in the siege of Yorktown, where he was "general of the trenches;" and took Gen. Porter's division when that officer was promoted to the command of the 5th army corps, May 18, 1862. He was in the battles of Hanover Court House, Mechanicsville, Gaines's mill, and Malvern hills, and was promoted to be major-general July 4. At the battle of Antietam he was in reserve with the rest of Gen. Porter's corps. He is now (December) military governor of Hagerstown, Md.

MORGAN, Edwin Dennison, governor of New York and major-general of volunteers in the U. S. army, born at Washington, Berkshire co., Mass., Feb. 8, 1811. In 1822 he entered the service of a grocer in Hartford, Conn., whose partner he became in 1831. In 1836 he removed to New York, where his commercial enterprises were highly successful. In 1849 he was elected, as a whig, member of the state senate, and served in that body for 4 years. He early attached himself to the republican party, was one of the vice-presidents of the national convention at Pittsburg, Feb. 22, 1856, and was made chairman of its national committee, which office he still holds. In 1858 he was elected governor of New

York, and was reëlected in 1860, being for a period of 20 years the first occupant of that office to receive the honor of a reëlection. His administration has been marked by a reduction in the state debt, an increase in the revenue from the canals, and a frequent use of the veto power. On the breaking out of the civil war in 1861 Gov. Morgan devoted himself to the work of raising and equipping troops with such zeal and efficiency, that on Aug. 1, 1862, the state had sent about 120,000 men to the field. On Sept. 20, 1861, he was appointed by the president a major-general of volunteers, the state of New York being created a military department under his command. For his services as major-general he has declined to receive pay.

MORGAN, George W., a brigadier-general of volunteers in the U. S. army, born in Washington co., Penn., in 1820. At the age of 16 he enlisted as a private in a company raised in western Pennsylvania to aid the Texans in their struggle for independence, and upon his arrival in Texas was commissioned a 2d lieutenant in the regular army. After attaining the rank of captain he retired from the service and returned home. In 1841 he entered the military academy at West Point, but left at the expiration of two years without completing his course, and removed to Mount Vernon, Ohio, where in 1845 he commenced the practice of the law. At the outbreak of the war with Mexico he was chosen colonel of the 2d Ohio volunteers, and at the expiration of his term of service was appointed colonel of the 15th U. S. infantry. In this capacity he participated in the campaign of the valley of Mexico under Gen. Scott, and for his gallantry at Contreras and Churubusco, at the latter of which places he was severely wounded, he received the thanks of the legislature of Ohio, and was promoted to be a brigadier-general by brevet. He left the army at the conclusion of the war, and continued to practise his profession until Jan. 1856, when he was appointed consul at Marseilles. In 1858 he was transferred to Lisbon as resident minister to Portugal, which post he held until the autumn of 1861, when he returned to the United States, and was appointed a brigadier-general of volunteers in the U. S. army, his commission dating from Nov. 21, 1861. He was assigned to duty under Gen. Buell, and in March, 1862, assumed command of the 7th division of the army of the Ohio, with which he was ordered to occupy Cumberland gap in S. E. Kentucky, then held by the confederates. This he accomplished in spite of almost insuperable obstacles, outflanking and forcing the confederates to retire on June 18. But in August he was threatened in his rear by the confederate Gen. Stephens, and in his front by Gen. E. Kirby Smith; and on Sept. 17, his communications being cut off, and his supplies nearly exhausted, he commenced a retreat toward the Ohio. (See Cumberland Gap.) By the departure of Smith the road northward was tolerably open, and the rear was protected from pursuit by obstructions placed in the gap. The march of the army was nevertheless harassed by constant attacks from Col. John Morgan's guerillas, and the rugged character of the route and the difficulty of procuring subsistence caused much suffering. The troops reached the river on Oct. 3, having marched 219 miles in 16 days, with a loss of not more than 60 in killed, wounded, and missing. In the succeeding November he was assigned to a command under Gen. Rosecrans in Tennessee. His conduct in evacuating Cumberland gap is to be made the subject of official investigation.

MORGAN, James D., brigadier-general of volunteers in the U. S. army, born in Boston, Mass., Nov. 19, 1810. At the age of 16 he went on board the ship Beverly for a 3 years' trading voyage. When 30 days out a mutiny occurred, and shortly afterward the ship was burned. Young Morgan with others of the crew escaped in open boats, remaining for 14 days out of sight of land. They finally landed on the coast of South America, and after enduring the greatest hardships he with several others made their way back to Boston, having been absent about 6 months. In 1834 he removed to Quincy, Ill., his present residence, and engaged in mercantile pursuits. At the time of the difficulties with the Mormons in 1844–'5 he was captain of the "Quincy rifles," and was ordered with his company to Hancock county to preserve order. During the Mexican war he served as captain in the 1st Illinois volunteers. In 1861 he became lieutenant-colonel of the 7th Illinois volunteers, and for meritorious services at New Madrid and Corinth was nominated to be brigadier-general of volunteers. In Nov. 1862, he was in command of a brigade at Nashville, Tennessee.

MORRIS, Thomas A., brigadier-general of volunteers in the U. S. army, born in Kentucky in 1811. He was graduated at West Point in 1834 and appointed brevet 2d lieutenant in the 1st artillery; resigned April 13, 1836, and became resident engineer of canals and railroads in the service of the state of Indiana, which office he left in 1841 for that of chief engineer of the Madison and Indianapolis railroad. In that place he remained till 1847, when he was appointed chief engineer of the Richmond and Terre Haute railroad. On the breaking out of the civil war in 1861 he was commissioned as brigadier-general by the governor of Indiana, and commanded in western Virginia under Gen. McClellan. He retired from the service at the expiration of the term of the first volunteers. In Oct. 1862, he was appointed a major-general, but declined the promotion.

MOZIER, Joseph, an American sculptor, born in Burlington, Vt., Aug. 22, 1812. He removed to New York in 1831, and was there engaged in mercantile pursuits until 1845, when he retired from business, and shortly after visited Europe. After devoting several years to the study of sculpture in Florence, he removed to Rome, where he now resides. His principal works are a statue of Pocahontas, the "Wept of the Wish-ton-Wish," contributed to the international exhibition at London in 1862, statues of "Truth" and "Silence" in the possession of the New York mercantile library association, "Rebecca at the Well," "Esther," a group illustrating the parable of the prodigal son, an "Indian Girl at the Grave of her Lover," and "Jephthah's Daughter."

MULLIGAN, James A., brigadier-general of volunteers in the U. S. army, born in Utica, N. Y., of Irish parents, June 25, 1830. His family removed to Chicago in the autumn of 1836, and he was graduated at the university of St. Mary of the Lake in 1850, being its first graduate, and in the same year entered upon the study of the law. In 1851 he accompanied J. L. Stephens to the isthmus of Panama, and returning to Chicago, resumed the study of his profession, at the same time editing a weekly Catholic paper, the "Western Tablet." In Nov. 1855, he was admitted to the bar. During the winter of 1857 he held a clerkship in the department of the interior at Washington. Immediately after the fall of Fort Sumter the regiment called the "Irish brigade" was organized, and he was elected colonel, and soon after ordered to Missouri. On Sept. 1, 1861, the regiment left Jefferson City for Lexington, where Col. Mulligan took command of the post, and defended it heroically for 9 days against an attack in overwhelming force by Gen. Sterling Price. (See Lexington, in this supplement.) He surrendered on Sept. 20, and remained a prisoner of war until Nov. 25, when he was exchanged. Returning to Chicago, he reorganized his regiment, and after a short tour through the eastern states, lecturing for various benevolent purposes, returned to Chicago, and was placed in command of Camp Douglas, guarding the confederate prisoners. In Jan. 1862, he proceeded with the Irish brigade to New Creek, Va., and is still (December) in command of that post. He was nominated a brigadier-general Nov. 18.

MUNFORDSVILLE, the capital of Hart co., Ky., situated on the N. bank of Green river, and on the Louisville and Nashville railroad, 100 m. S. W. from Frankfort; pop. about 500. Two battles have been fought here since the commencement of the civil war. The first occurred on Dec. 17, 1861, between a portion of Gen. McCook's division of Gen. Buell's army and the confederates under Brig. Gen. Hindman. The troops first attacked consisted of 4 companies of Col. Willich's 31st Indiana regiment, under Lieut. Col. Von Trebra, and the attacking force was composed of 2 regiments of infantry, a regiment of cavalry, and a battery of artillery. The Indiana troops held their ground till reënforcements arrived; then ensued a desperate fight, in which the Texan rangers took the lead on the confederate side, their infantry having been driven back by the first determined Union charge. When the U. S. force was nearly overpowered by superior numbers, Col. Willich reached the field, and was slowly retiring when a skilful flank movement of one company of infantry threw the confederates into confusion and won the day. The Union loss was 10 killed and 22 wounded; that of the confederates was about 50 killed according to the best Union authorities; they, however, place the amount of their loss much lower.—The second battle, or rather series of battles, began on Sept. 14, 1862. At that time the Union troops there numbered 4,000 of all kinds, and were under the command of Cols. Wilder and Dunham. The confederates who opposed them were 10,000 strong, and were commanded by Gen. Duncan. The object of the attack was the destruction of a fine railroad bridge across the Green river, an operation which would cut off the approaching reënforcements of Gen. Buell. On Sept. 14 the confederate general sent to Col. Wilder a demand for a surrender; this was refused, and a brisk action ensued, the confederates attacking the Union troops in their works, although the latter made frequent desperate sorties with marked effect. The result of the day's action was the repulse of the confederates with a loss in killed and wounded of fully 400; the Union loss was but 8 killed and 27 wounded. On the next day every thing was quiet, but the confederates were reënforced by the divisions of Polk and Buckner, while Col. Wilder received the addition of one regiment and a battery of light artillery; a somewhat exaggerated estimate of the force opposed to the latter makes their number 25,000. On Sept. 16 the battle was renewed, but the action was not close or severe; the confederates would not be drawn into the field, and the contest was carried on by artillery in a desultory manner, without material loss on either side. On the morning of the 17th the reason of this course became evident; the confederates had merely wished to divert the attention of Col. Wilder from the arriving forces of Bragg, which came up and placed themselves in such a position that at the time named the Union commander was obliged to surrender; the number of troops thus given up was 4,600. On the 21st, however, 3 regiments of Union cavalry, under Col. Edward McCook, drove out a large body of confederate cavalry and reoccupied Munfordsville.

MURFREESBOROUGH, the capital of Rutherford co., Tenn., 31 m. S. E. from Nashville, on the Nashville and Chattanooga railroad, where a battle was fought July 13, 1862, between the Union troops under Gen. T. T. Crittenden and the confederates under Col. Forrest. The national force occupying the place numbered about 1,400, and the attacking force consisted of 3,000 to 4,000 Georgians, Texans, and guerillas. The confederates were armed chiefly with carbines and shot guns. The Union troops were strongly intrenched, and made much havoc among the confederates by the well directed fire of a battery. The action continued for some hours, but at last the Union ammunition was exhausted, there was no means of obtaining a fresh supply, and a surrender became inevitable. On the next day, however, the confederates evacuated Murfreesborough and fell back to McMinnville, taking the captured officers and paroling the men. The Union loss was 33 killed and 62 wounded; that of the confederates was 50 killed and 100 wounded. After the evacuation of Kentucky by Bragg and his retreat before Rosecrans in October and November, Murfreesborough became about Dec. 1 the centre where his army was mainly collected.

MYERS, Abraham C., a general in the service of the confederate states, born in South Carolina about 1814, was graduated at West Point in 1833 and appointed brevet 2d lieutenant in the 4th infantry; became 2d lieutenant Dec. 31, 1835, 1st lieutenant Sept. 6, 1837, and assistant quartermaster with the rank of captain Nov. 21, 1839; was brevetted major for gallantry at Palo Alto and Resaca de la Palma, May 9, 1846; was quartermaster to Worth's division in the valley of Mexico, and was brevetted lieutenant-colonel for gallantry at Churubusco; became chief quartermaster to the army in Mexico; resigned his commission Jan. 28, 1861, entered the confederate army, and is now (Dec. 1862) its quartermaster-general with the rank of brigadier-general.

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NAGLE, James, brigadier-general of volunteers in the U. S. army, was a captain in the 1st regiment of Pennsylvania volunteers during the Mexican war, and reëntered the service in April, 1861, as colonel of the 6th Pennsylvania volunteers. He was attached to the command of Maj. Gen. Patterson during the campaign ending with the battle of Bull run, July 21, 1861, and was disbanded at the expiration of his term of service. He subsequently took command of the 48th Pennsylvania volunteers, fought gallantly at South mountain, where he commanded a brigade in Sturgis's division of Burnside's army corps, and was made brigadier-general in Sept. 1862.

NAGLEE, Henry Morris, brigadier-general of volunteers in the U. S. army, born in Philadelphia, Jan. 15, 1815. He was graduated at West Point in 1835, and received a commission in the 5th infantry, but resigned in December of the same year. He was a civil engineer until the Mexican war, in which he served as captain in the 1st regiment New York volunteers, and was given a detached command in Lower California. After the close of the Mexican war he engaged in commercial pursuits in San Francisco, where he accumulated a large fortune. At the fall of Fort Sumter in April, 1861, he offered his services to the government; was appointed lieutenant-colonel of the 16th infantry, May 14; resigned Jan. 10, 1862, and was made brigadier-general of volunteers Feb. 4, and ordered to join Gen. Hooker's division on the Potomac below Washington. In March he went with the army of the Potomac under Gen. McClellan to the peninsula, and was assigned to the 1st brigade in Gen. Casey's division, which he commanded at the battles of Williamsburg and Fair Oaks, and with which he conducted some of the most important reconnoissances before Richmond. At the retreat of the Union army his brigade formed a portion of the rear guard, which brought off the large train of supplies without loss or confusion. In October he was attached with his brigade to Keyes's army corps at Yorktown, Va., of which place he is now (Dec. 1862) military governor.

NEGLEY, James S., brigadier-general of volunteers in the U. S. army, born in Pennsylvania, entered the service in 1861, and after serving as colonel of a regiment of Pennsylvania volunteers, and commanding a brigade under Gen. Patterson on the upper Potomac, was appointed brigadier-general of volunteers, Oct. 1, 1861. He served under Gen. O. M. Mitchel in northern Alabama, and was afterward appointed to the command of the 8th division of Gen. Buell's army of the Ohio and stationed at Nashville, Tenn. On Oct. 7, 1862, he defeated at Lavergne a confederate force under Gens. Anderson and Forrest and Gov. Harris, who were menacing Nashville. He was relieved from the command of this post in order to take the field in Nov. 1862.

NÉLATON, Auguste, a French surgeon, born June 17, 1807, was a pupil of Dupuytren, received his medical degree in 1836, was soon afterward admitted as a hospital surgeon and fellow of the faculty of medicine, and has been since 1851 professor of clinical surgery. He holds a high rank both as a professor and practitioner, and has recently invented a remarkable operation for the immediate extraction of calculi, distinct from all the processes of lithotrity. He has published *Traité des tumeurs de la mamelle* (4to., 1839); *Parallèle des divers modes opératoires dans le traitement de la cataracte* (8vo., 1850); *De l'influence de la position dans les maladies chirurgicales* (8vo., 1851); and *Éléments de pathologie chirurgicale* (5 vols. 8vo., 1844–'59), his chief work, in which he was aided by many of his pupils.

NELSON, William, major-general of volunteers in the U. S. army, born at Maysville, Mason co., Ky., in 1825, killed at Louisville, Ky., Sept. 29, 1862. He was a brother of the Hon. Thomas Nelson, present U. S. minister to Chili.

He entered the U. S. navy in 1840, became passed midshipman in 1846, commanded a naval battery at the siege of Vera Cruz, and was afterward ordered to the Mediterranean, whence he returned to the United States in the steam frigate Mississippi, which brought over Kossuth. He accompanied Kossuth during part of his tour through the United States. In 1854 he was promoted to be master, and in 1855 to be lieutenant, and was for two years commander of the store ship Fredonia, belonging to the Pacific squadron. In 1858 he was ordered to the Niagara when she carried back to Africa the negroes taken from the slaver Echo. At the outbreak of the civil war he was on ordnance duty at Washington. He was now promoted to be lieutenant-commander and detailed to command the gunboats on the Ohio river; but he was soon detached from this duty, placed under the authority of the secretary of war, and ordered to Kentucky to sound and strengthen the loyal sentiment of the state. He organized Camp Dick Robinson, between Garrardsville and Danville, formed another camp at Washington in Mason co., was very successful in raising troops, and had several conflicts with the confederates in eastern Kentucky. He was appointed brigadier-general of volunteers Sept. 16, 1861, and commanded the 2d division of Gen. Buell's army at the battle of Shiloh; was wounded at the battle of Richmond, Ky.; and took command at Louisville when that place was menaced by Gen. Bragg's army, and at once issued an order for all the women and children to leave the city. He was promoted to be major-general of volunteers July 17, 1862. He was shot by Brig. Gen. Jefferson C. Davis in a personal quarrel.

NEVADA, a territory of the United States, formed from parts of the state of California and of the territory of Utah, and formerly known as Carson valley and Washoe, organized by act of congress, March 2, 1861; area estimated at 70,000 sq. m.; pop. in 1860, 25,414, of whom 6,857 were whites and free colored, 10,507 Indians under the control of the U. S. government, and 7,550 Indians still retaining their tribal character. It is bounded N. by Oregon and Washington territory, E. by Utah, S. by New Mexico, and S. W. and W. by California. About 10,000 square miles of its territory within the original limits of the state of California, but lying E. of the Sierra Nevada, are only to be incorporated with it by the sanction of the legislature of California. Capital, Carson City. Principal towns, Virginia City, Genoa, and China Town. The territory lies wholly within the great American basin. The Sierra Nevada forms its western boundary, and from that range eastward to Utah is a vast table land, with a chain of lakes extending from N. to S. through the territory at the foot of the Nevada range, into which flow the Humboldt, Carson, and other smaller rivers, but which have no visible outlet to the ocean, or to any rivers, lakes, or gulfs connected with it. The eastern slope of the Sierra Nevada is highly metalliferous. Silver in large quantities, gold, lead, and other metals are found, and the territory is rapidly filling up with a hardy mining population. The climate is delightful, being protected from the violent winds of the Pacific coast, and possessing a pure, dry, and healthful atmosphere. The soil is very rich and fertile wherever water can be brought to moisten it, and when properly cultivated yields grasses, cereals, and vegetables of every description, of superior quality and in large quantities. The existence of silver in this territory was first discovered in 1859. It is for the most part found in the form of a highly argentiferous galena, and its mining has proved profitable to those who early secured claims in the mineral districts. The ores are mostly shipped to England for reduction. Many of them contain silver to the amount of $2,000 per ton. The settlements thus far are confined almost exclusively to the western border of the territory, in the mineral region.

NEW MADRID, a town in S. E. Missouri, on the Mississippi river, capital of the county of the same name, from which a confederate force was driven by the national army under Gen. Pope, March 14, 1862. At an early period in the civil war the place, on account of its strategic importance, was strongly fortified by the confederates, and upon the arrival of Gen. Pope in front of it on March 3, 1862, the garrison numbered about 5,000 men under Gens. McCown, Stewart, and Gantt. This force received considerable additions during the next few days. The defensive works consisted of a bastioned earthwork, mounting 14 heavy guns, about half a mile below the town, and another irregular work at the upper end of the town, mounting 7 pieces of heavy artillery, both being connected by lines of intrenchments. Six gunboats, carrying from 4 to 8 heavy guns each, and commanded by Capt. Hollins, were anchored along the shore, between the upper and lower redoubts; and so high was the river that their guns looked directly over the banks, commanding with the guns of the redoubts the approaches of the town for 7 miles. Dreading the fire of the gunboats, even should the intrenchments be carried by assault, Gen. Pope encamped his army beyond their range, and sent to Cairo for siege artillery. He employed the interval in making reconnoissances in the neighborhood of the town, and also established a battery at Point Pleasant, 12 miles below, by which the enemy were cut off from receiving further supplies by the river. On the 12th the siege guns arrived and were placed in battery, and on the succeeding day an effective fire was opened upon the confederate works and gunboats. The latter replied, though with little effect. The enemy, however, alarmed by the rapidity with which the trenches were approaching the town, abandoned their works on the night of the 13th, in the midst of a severe thunderstorm, and crossed the river to the vicinity of Island

No. Ten, where they had erected strong defensive works. So precipitate was their flight that their dead were found unburied, their suppers untouched, and the candles still burning in their tents. Among the spoils which fell into the hands of the Union army were 33 pieces of artillery and several thousand stand of small arms, with an abundance of fixed ammunition and musket cartridges. The confederates also left a complete camp equipage for an army of 10,000 men, which, according to the estimate of Gen. Pope, was about their number, escaping only in their clothes. The total casualties of the Union forces during the siege were 51 killed and wounded. Those of the confederates are not known. Gen. Pope immediately occupied the deserted works, and during the next 3 weeks coöperated efficiently with Flag Officer Foote in the reduction of Island No. Ten.

NEW ORLEANS, Occupation of. In the middle of April, 1862, a Union fleet consisting of 24 steamships and gunboats, commanded by Flag Officer D. G. Farragut, to which was attached the mortar fleet of 21 schooners under Commander David D. Porter, proceeded up the Mississippi river to attempt the capture of New Orleans. A land force under Gen. B. F. Butler was at the same time embarked at Ship island to coöperate with the war vessels. The defences mainly depended upon for the protection of the city were Forts Jackson and St. Philip, situated respectively on the right and left banks of the river, about 25 m. from its mouth and 75 m. below New Orleans. Here a chain had been thrown across the stream, and this barrier, together with the forts and a fleet of 20 confederate steam rams and gunboats, had been supposed to be sufficient to repel any possible attack. On April 18 the mortar schooners, anchored under cover of woods on the right bank of the river, opened fire upon Fort Jackson, from which their position was about 2 m. distant. For 6 days the bombardment continued with great vigor, and, as it afterward appeared, with considerable effect upon both forts, the fire from which, however, was not sensibly diminished. The enemy in their turn annoyed the Union fleet by sending down fire rafts, which proved totally ineffective, and were readily towed ashore and suffered to burn out. The reduction of the forts by bombardment promising to be a tedious operation, the flag officer determined to run past them with the war steamers and gunboats, and proceed up the river to New Orleans. At 2 o'clock on the morning of the 24th 16 steamers and gunboats, formed into two columns, of which that on the right was commanded by Flag Officer Farragut and that on the left by Capt. Theodorus Bailey, the second in command in the squadron, steamed quietly up the river, keeping near the shore for the purpose of disturbing the range of the enemy's guns. The chain barrier offered but a feeble resistance, and under cover of a fog the 3 leading vessels nearly succeeded in passing the forts before they were discovered by the enemy. The latter at once opened a severe fire upon the fleet, which replied with broadsides against both forts, while the mortar boats from below recommenced their bombardment, to draw the attention of the enemy. The confederate gunboats, with the formidable steam ram Manassas, advanced to support the forts; and at about 3 A. M., the river being then obscured by a dense fog, a furious battle raged along the space between the forts and for several miles above. The leading vessel of the Union fleet, the Varuna, Capt. C. S. Boggs, being a fast sailer, soon passed the forts and found herself surrounded by a number of hostile steamers, with which she was compelled to engage single-handed. Four of them she set on fire by well directed broadsides, so that they were obliged to run ashore, her own casualties being comparatively slight; another having an iron-clad prow succeeded in butting her, but was set on fire and sunk by a broadside fired at close quarters; and a sixth, also partially iron-clad, seeing the Varuna herself on fire, seized the opportunity to strike her twice heavily amidships. The second blow crushed in her sides, leaving her in a sinking condition; but Capt. Boggs continued to fire until his decks went under water, when he ran his vessel ashore and landed the crew in safety, having the satisfaction of leaving his adversary aground and in flames. Some of the other ships of the attacking fleet also experienced a rough handling, the steam sloop of war Brooklyn being at different times actively engaged with the Manassas, with Fort St. Philip, which she silenced, and with a large confederate steamer which she sank. Her casualties were 34 killed and wounded. The Hartford, Farragut's flag ship, was at one time in contact with a fire raft, the flames from which communicated to her rigging and were with difficulty extinguished; and the steam frigate Mississippi encountered in fair fight the much dreaded Manassas, and drove her ashore, where she was deserted by her crew. When last seen, the Manassas was drifting down stream in a sinking condition, with flames bursting from her sides. Within two hours after the commencement of the fight the greater part of the confederate fleet was annihilated or dispersed, and the forts safely passed by 13 vessels of Farragut's squadron, two of the gunboats having been compelled to put back, and a third, the Varuna, destroyed. On the 25th the squadron appeared before the Chalmette batteries, situated 6 or 7 m. below New Orleans, and which after a feeble and ineffective fire were silenced by a few broadsides. By order of the military authorities, all the confederate munitions and stores in the city had been previously sent away, and such material of war as could not be removed was destroyed. Orders were also given to destroy all the cotton, and as the fleet approached the city the levee for miles was wrapped in smoke from burning bales and gun carriages. In the river were many hulls of burning ships, the remains of the confederate navy, and of the merchant vessels and steamboats which had contained cotton and sugar. The Union fleet steamed slowly along in front of the city, the shores of which were lined by a silent multitude, and Capt. Bailey was despatched to demand a capitulation. The mayor, John T. Monroe, referred him to Gen. Lovell, the confederate military commander, who refused to surrender the city, but left the authorities to pursue what course they might think proper. Gen. Lovell immediately afterward departed with his forces by railroad to Jackson, Miss. Resistance being useless under these circumstances, the city was surrendered on the 26th. A detachment of the fleet had previously been sent to take possession of the defences at Carrollton, 7 m. above New Orleans, erected for the purpose of repelling an attack from Flag Officer Foote's flotilla; and several vessels soon after proceeded up the river as far as Baton Rouge, which fell without a struggle. Meanwhile, on the 25th, Gen. Butler arrived with a portion of his troops in the bay projecting into the Louisiana coast in the rear of Fort St. Philip, which, though passed by the fleet, had not yet surrendered. Within the next 3 days a considerable body of men were landed and marched to the quarantine buildings, a couple of miles above Fort St. Philip; and on the 28th the commanders of this work and of Fort Jackson, finding themselves cut off from all hope of succor, surrendered to Gen. Phelps and Commander Porter of the mortar fleet, who permitted the garrisons to march out with the honors of war, the officers retaining their side arms, and the men being released on parole. The surrender of the forts included that of several confederate steamers and of a formidable iron battery, the Louisiana, of which great expectations had been entertained. The latter, pending the negotiations for capitulation, was towed into the stream, and, having been set on fire, was cast adrift in the expectation that she would explode in the midst of the Union fleet. The explosion however happened sooner than was anticipated, and no casualty occurred beyond the wounding of a confederate soldier in Fort St. Philip. A steam ram of great size called the Mississippi, which had been launched above New Orleans a few days before the fight, was destroyed by the confederates previous to the surrender of the city. Notwithstanding the severity and long continuance of the bombardment, the forts were not so greatly injured but that the attempt to reduce them might have been protracted throughout the ensuing spring and summer. The landing of Gen. Butler in the rear of Fort St. Philip, thus cutting off reënforcements, was the principal inducement to surrender. The total Union loss in this series of operations was 36 killed and 123 wounded; that of the confederates has been estimated at upward of 1,000, several of their gunboats having gone down during the action of April 24 with all on board. The forts having been supplied with garrisons of Union troops, Gen. Butler proceeded up the river, and on May 1 took formal possession of New Orleans, establishing his headquarters at the St. Charles hotel. Troops were landed both in the city and in Algiers, on the opposite shore of the river, and a portion of the squadron lay in the stream, prepared to open fire at the first indication of a popular rising against the garrison. Gen. Shepley was at the same time appointed military governor of New Orleans. After a conference with the municipal government and some of the principal inhabitants, Gen. Butler issued a proclamation placing the city to a certain extent under martial law, and providing for an orderly administration, under which due regard should be had for private rights, and obedience paid to the authority of the United States. The inhabitants were enjoined to pursue their customary avocations, and all civil causes and all misdemeanors, except those of an aggravated nature interfering with the forces or laws of the United States, were to be referred to the ordinary local tribunals. The circulation of confederate bank notes, which were the principal substitutes for money in use, was temporarily permitted, and the newspapers were encouraged to continue their publication, subject to the authority of a censor to expunge all articles reflecting upon the United States, or tending to subvert the existing military government. For the effective promotion of order a body of men known as the European legion, which was organized to protect the lives and property of the citizens, was invited to coöperate with the military authorities. The newspapers unanimously refused to print the proclamation, whereupon professional printers were selected from some of the New England regiments, by whom it was put in type and published in the "True Delta" of May 2. The city remained comparatively quiet, and under the firm rule of Gen. Butler public confidence was gradually restored and commercial activity awakened. The inhabitants, however, distrusting the ability of Butler to maintain his position in the city, at first manifested little or no enthusiasm for the restoration of the national supremacy, and carefully abstained from expressing any political opinions, or making any overt demonstrations. The exception to this rule was the conduct of a portion of the female population, who took frequent opportunities to annoy and insult the soldiery while in the orderly discharge of their duties. Gen. Butler thereupon issued, on May 15, an order, known as No. 28, which declared that all women thereafter convicted of insulting Union officers and men "shall be regarded and held liable to be treated as women of the town." The order was violently attacked by the mayor in a communication to the municipal government. This official was accordingly arrested by Gen. Butler and ordered to be committed to Fort Jackson; but by a timely apology he escaped incarceration. In mitigation of the odium which this order created, Gen. Butler subsequently published an explanation to the effect that its provisions were in accordance with a municipal regulation of the city of New Orleans, which punishes with imprisonment women of the town found in the streets after nightfall, or who may converse from the windows of their houses with persons outside. It had the effect of relieving the soldiers from much personal inconvenience, and from the possible necessity of protecting themselves against more serious insults, which the patient endurance of these petty annoyances might have provoked. Another proceeding, which created excitement among the ill-disposed population of the city, was the seizure by Gen. Butler of large quantities of specie, supposed to belong to the confederate government, and which had been deposited by the Citizens' bank of New Orleans for safe keeping with the consuls of the Netherlands and of France. At the recommendation of Mr. Reverdy Johnson, who was sent to New Orleans during the ensuing summer to examine into this affair, the money was allowed to remain in the hands of the consuls. Subsequent developments have led to the belief that it was afterward used for the purchase of cloth for the seceded states, but this has been explicitly denied by Mr. Johnson in a published card. Gen. Butler also arrested several British subjects on charges of giving aid to the enemy, and held the foreign consuls resident in New Orleans to a rigid discharge of their official duties. Several of the newspapers, having advocated the burning of cotton and other produce, were suppressed, and the wants of the poorer classes were relieved by the public distribution of the stores accumulated for the subsistence of the confederate soldiers. By an order issued on May 16, no confederate money or obligations of any description were permitted to be circulated after the 27th of the month. On June 1 the port of New Orleans was declared by a proclamation of the president to be open to trade; Charles L. Lathrop, a former resident of the city, was appointed collector, and steam communication with the loyal states was immediately resumed. Early in June one William B. Mumford, who had been found guilty by a military commission of pulling down an American flag, which had been hoisted on one of the public buildings of the city on April 26, and sentenced to death, was executed in the presence of a large concourse of people, who refrained from any public expression of opinion. The only other execution which has taken place was that of two soldiers of the garrison, convicted of robbery by a court martial. On June 14 the first of a series of Union meetings took place, and was addressed by several of the old inhabitants. Since then upward of 60,000 persons have registered their allegiance to the United States, being prompted thereto by Gen. Butler's order, No. 76, requiring all citizens to take the oath and make a return of their property. In accordance with the provisions of the confiscation act of July, 1862, certain portions of the district of Lafourche on the W. side of the Mississippi, and all that part of Louisiana E. of the river except the parishes of Orleans, St. Bernard, and Plaquemines, were in November declared sequestered, and all sales or transfers of property therein forbidden. A commission was also appointed to take possession of the several districts, under whose direction the sugar plantations have been worked, and the property of disloyal persons inventoried and sold for the benefit of the government. From these sales, which are still (Dec. 1862) in progress, considerable sums have been realized. In November also Gen. Shepley, as military governor of Louisiana, issued an order directing the election of two members of congress from the 1st and 2d congressional districts of the state, and authorizing all citizens to vote who had taken the oath of allegiance. On Dec. 3 Benjamin F. Flanders and Michael Hahn were elected to represent the two districts.

NEWBERN, N. C., BATTLE OF, an action fought March 14, 1862, between a combined land and naval force of the United States under Gen. Burnside and Commander S. C. Rowan, and a confederate army under Gen. Lawrence O'B. Branch. On March 12 the entire Union force left Hatteras inlet, where a rendezvous had been made, Roanoke island being the point of departure, and on the same night anchored in the Neuse river, off the mouth of Slocum's creek, about 16 m. below Newbern. There a landing of the troops was effected on the morning of the 13th, and the march toward Newbern was immediately begun. At night the force bivouacked at a distance of 12 m. from Slocum's landing, and within a mile and a half of the confederate works. The gunboats preceded the troops up the river, shelling the banks to clear their way and protect their advance. On the morning of the 14th the land forces, in number not over 10,000, were formed into 3 columns, under Gens. Foster, Reno, and Parke, and the entire division advanced. The confederates, numbering about 10,000, were posted behind a most formidable line of breastworks, more than 2½ m. in length, extending from the bank of the Neuse river to the Atlantic and North Carolina railroad, the embankment of which aided in strengthening the position, and thence onward for more than a mile, in a chain of cunettes and redans, terminated by a two-gun battery; on the bank of the river was a flanking bastion, called Fort Thompson, the guns of which were so placed that, while commanding the stream, they could be turned upon the line of intrenchments; a broad and deep ditch, swampy ground, a dense undergrowth, and piles of felled timber added to the strength of the works. Early in the forenoon the Union army commenced the battle. The fire of the confederates was very severe, and for an hour the advantage seemed to be on the side of the latter; then, however, a desperate charge of a Massachusetts regiment up the line of the railroad put them in possession of one of the opposing batteries, and renewed the spirits of the whole line. The confederates rallied and drove the regiment from this battery, but a brilliant charge of a Rhode Island regiment had meanwhile taken another battery of 5 guns; from this they continued the assault in conjunction with other regiments, and the enemy soon fled from all their works, the fort on the river bank being likewise deserted. The confederates retreated across the Trent river, burning a fine bridge to impede the pursuit of the Union force, and took the road to Goldsborough; they first, however, made an unsuccessful attempt to burn the city of Newbern. During the operations of the land force the gunboat fleet engaged Fort Thompson, on which rested the confederate defences, and bombarded it with marked effect. When it was abandoned the fleet advanced up the river, in spite of sunken piles and torpedoes, and reached the city just as the retreating army had passed beyond reach of its guns. By this victory the combined force captured 8 batteries of 46 guns, 3 light batteries of 6 guns, 2 steamboats, a number of sailing vessels, many wagons and horses, large commissary stores, the entire camp equipage of the confederates, a great quantity of rosin, turpentine, and cotton, and 200 prisoners. The Union loss was about 100 killed and 400 wounded. The casualties of the confederates are not known, but were probably no larger.

NEWTON, John, brigadier-general of volunteers in the U. S. army, born in Virginia, was graduated at West Point in 1842 and appointed 2d lieutenant of engineers; was acting assistant professor of engineering at West Point from Oct. 18, 1843, to Aug. 31, 1844, and assistant professor from the latter date till July 1, 1846; became 1st lieutenant in Oct. 1852, captain in July, 1856, major Aug. 6, 1861, and brigadier-general of volunteers Sept. 23, 1861; and in Sept. 1862, took command of the division in the army of the Potomac formerly commanded by Gen. Slocum in Franklin's army corps.

O

OGLESBY, Richard James, brigadier-general of volunteers in the U. S. army, born in Oldham co., Ky., June 24, 1824. He studied law at Springfield, Ill., and commenced practice at Sullivan, Moultrie co. During the Mexican war he served as lieutenant in the 4th regiment of Illinois volunteers, under Col. E. D. Baker. In the spring of 1849 he joined an overland company on their way to California, where he remained for two years, when he returned to Decatur, Ill., and resumed his practice. In 1858 he was an unsuccessful candidate for congress. In 1860 he was elected to the state senate. He was chosen colonel of the 8th Illinois volunteers in 1861, commanded a brigade at the battle of Fort Donelson, and was commissioned brigadier-general of volunteers, March 21, 1862, for his gallantry in that engagement. He was in the battle of Shiloh, and was severely wounded at the battle of Corinth, Oct 4, 1862.

ORD, Edward Otho Cresap, major-general of volunteers in the U. S. army, born in Maryland in 1818. His father was an officer in the war of 1812. He was graduated at West Point in 1839 in the same class with Gen. Halleck, and assigned as 2d lieutenant to the 3d regiment of artillery. After serving several years in Florida against the Seminole Indians, he was employed on garrison duty and the coast survey until 1846, when he was ordered to California. He performed various important services during the war with Mexico, and in 1848 contributed to the preservation of law and order on the Pacific coast by the arrest and summary execution, after a trial by jury at which he acted as prosecutor, of several desperadoes who had been guilty of shocking murders. In 1851 he was promoted to be a captain, and was stationed for several years on the Atlantic coast; but in 1855 he returned to California, and served both there and in Oregon and Washington territories until 1861, participating during the interval with credit in several Indian wars. In Sept. 1861, he was appointed brigadier-general of volunteers, and on his arrival in Washington in the autumn was assigned to the command of a brigade in the division composed of the Pennsylvania reserve corps, under command of Gen. McCall. In November he was promoted to be major in the 4th artillery. On Dec. 20 he defeated a body of rebel troops commanded by Gen. Stuart, at Dranesville, Va., near the Potomac, an action which did much to restore the *morale* of the army, and for which he was promoted to be a major-general of volunteers, May 2, 1862. He was soon after ordered to report to Gen. Halleck of the army of the Mississippi, and was placed in command of Corinth, and subsequently of the 2d division of the district of West Tennessee. He participated in the pursuit of the confederates after the battle of Corinth, in October.

OSTERHAUS, Peter J., brigadier-general of volunteers in the U. S. army, born in Prussia, entered the Union service in 1861 as major of the 2d Missouri volunteers; took part in the battles of Dug Spring and Wilson's creek; became colonel of the 12th Missouri volunteers; commanded a brigade under Gen. Fremont; took part in the expedition under Gen. Curtis, which resulted in the battle of Pea ridge, where he commanded a division, and greatly distinguished himself; was promoted to be a brigadier-general June 9, 1862, and now (Dec. 1862) commands a division in the army whose head-quarters are at Helena, Ark.

OUVRARD, Gabriel Julien, a French financier, born near Clisson, Loire-Inférieure, Oct. 11, 1770, died in London in Oct. 1846. At the commencement of the revolution he was a successful dealer in colonial produce at Nantes; and in 1797 he entered into a contract for provisioning the French navy, soon acquired a capital of more than 15,000,000 francs, and became the head of the great banking company at Paris called the *négociants réunis*, of which the other principal members were MM. Desprez and Vanlerberghe. This company, while holding heavy contracts for the army and navy, undertook also to discount for the government the obligations of the receivers-general and the subsidy due from the Spanish government, and thus obtained almost entire control of the finances of the country—a result facilitated by the unlimited confidence reposed in it by M. Marbois, the minister of finance, to whom it advanced heavy sums. While Spain was suffering under a great scarcity of corn, Ouvrard undertook its immediate relief, and succeeded by procuring permission through M. Marbois to export several cargoes from French ports; he also contracted to supply the Spanish army and navy, and advanced money for the immediate needs of the court. In return he obtained in 1805 the exclusive right to carry on trade with the Spanish colonies, and to import all the treasure brought thence to Europe at a high rate of profit—an enormous advantage except for the difficulty of escaping the English cruisers, which he sought to overcome by connections with the house of Hope and other Dutch bankers who were also established in England. But a financial crisis was approaching, which this process was too slow to avert. The bank of France had discounted for the company and the public functionaries without stint in its own paper, while its specie reserve was nearly exhausted by the wants of the army; and it now found itself in a very precarious position. The company had contracted to discount the obligations of the receivers-general at 6 per cent. per annum, but had itself been obliged to pay from 9 to 12. In Oct. 1805, also, the Spanish government, very heavily in its debt, suspended specie payments, thus preventing the company from meeting its home obligations. It was saved from immediate bankruptcy by new accommodations from M. Marbois and the bank, but many other great houses failed. In Jan. 1806, however, on his return from Austria, Napoleon compelled the company to yield up all its assets, which fully liquidated its debts, though these amounted to 141,000,000 francs, ordered Ouvrard, whom he had always disliked, into custody at Vincennes, and dismissed M. Marbois. In 1810, Napoleon being desirous of opening secret negotiations for recognition and amity with the British cabinet, Fouché, the minister of police, at the suggestion of Ouvrard, who had gained great influence over him, and whom he had on his own authority permitted to leave Vincennes to settle up his affairs, recommended for the task Labouchère, the great Amsterdam banker. His advances having been repelled, Fouché, without Napoleon's knowledge, sent Ouvrard to Amsterdam with instructions to Labouchère, offering terms far more advantageous to England, under which the negotiation was reopened.* Napoleon having accidentally discovered this bold intermeddling, Fouché was dismissed in disgrace, and Ouvrard thrown into the prison of Ste. Pélagie, where he remained till 1813. In 1814, on the occupation of the allies, he contracted for the provisioning of their armies; and in 1817 the government adopted a financial system proposed by him, which had formerly been rejected by the directory, but now proved highly successful. Having contracted for the supplying of the French army sent to Spain in 1823, proceedings were commenced against him by the government for fraudulent dealings, and he was again confined at Ste. Pélagie; but by the intercession of Ferdinand VII. he was released at the end of 5 years without trial, and afterward lived in great obscurity in London. Ouvrard published several works on finance, and *Mémoires sur sa vie et ses diverses opérations financières* (3 vols. 8vo., Paris, 1826).

P

PAINE, Eleazar A., brigadier-general of volunteers in the U. S. army, born in Geauga co., O., Sept. 10, 1815. He was graduated at West Point in 1839, and assigned to the 1st infantry, Col. Zachary Taylor's regiment. He served on Taylor's staff during the Florida war, resigned his commission in 1841, studied law, and in 1844 began the practice of his profession in Ohio, whence he removed in 1848 to Monmouth, Warren co., Ill. In April, 1861, he was elected colonel of the 9th Illinois volunteers, and on Sept. 3 was promoted to be brigadier-general. On March 12, 1862, he was assigned to the command of the 1st division of the army of the Mississippi under Gen. Pope, and the next day participated in the battle of New Madrid. He was also present at the capture of Island No. Ten, and in the advance on Corinth, the evacuation of which was materially hastened by his operations, his troops being twice engaged with the confederates at Farmington, May 5 and 9.

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* This account of the affair, given by Thiers after repeated examination of the documents, differs in some essential particulars from former ones.

PALMER, Innis N., brigadier-general of volunteers in the U. S. army, born in New York, was graduated at West Point in 1846 and appointed brevet 2d lieutenant in the mounted rifles; became adjutant in 1847; was brevetted 1st lieutenant and captain for gallantry at Contreras and Churubusco and at Chapultepec, in the last of which engagements he was wounded; was again appointed adjutant in 1850, and was promoted to be 1st lieutenant in 1853, captain in the 2d cavalry in 1855, and major in the 5th cavalry in April, 1861. He was commissioned brigadier-general of volunteers in March, 1862, to date from Sept. 23, 1861, and is now (Dec. 1862) in command of the drafted militia at Philadelphia.

PALMER, John McCauley, brigadier-general of volunteers in the U. S. army, born in Christian co., Ky., Sept. 13, 1817. He removed to Illinois in 1832, and in 1839 settled in Carlinville, and was admitted to the bar in 1840. In 1847 he was elected a delegate to the state constitutional convention, and in 1852 and 1854 a member of the state senate. In 1856 he was a delegate from Illinois to the national republican convention at Philadelphia, and in 1860 was one of the electors of the state at large on the republican ticket. In Jan. 1861, Mr. Palmer was appointed by the governor one of the five commissioners to the peace convention which met at Washington Feb. 4. In April he was elected colonel of the 14th regiment Illinois volunteers. He accompanied Gen. Fremont in his expedition to Springfield, Mo., and on Dec. 13 was commissioned brigadier-general of volunteers. He was with Gen. Pope at the capture of New Madrid and Island No. Ten, and at the battle of Farmington, and commanded the 1st brigade, 1st division, of the army of the Mississippi. In Nov. 1862, he was with Gen. Grant's army, in temporary command of a division.

PARKE, John G., major-general of volunteers in the U. S. army, born in Pennsylvania, was graduated at West Point in 1849 and appointed brevet 2d lieutenant of topographical engineers; became 1st lieutenant in July, 1856; astronomer and surveyor of the north-west boundary commission, Feb. 14, 1857; captain, Sept. 9, 1861; and brigadier-general of volunteers, Nov. 23, 1861. He commanded a brigade in Burnside's expedition to North Carolina, fought at Roanoke island and Newbern, and was promoted to be a major-general, April 26, 1862; accompanied Gen. Burnside when he joined the army of the Potomac; served in his corps through the campaign under Gen. Pope before Washington, and that under Gen. McClellan in Maryland and Virginia; and when Burnside assumed command of the army of the Potomac became his chief of staff, which post he still retains (Dec. 1862).

PATRICK, Marsena R., brigadier-general of volunteers in the U. S. army, born in Jefferson co., N. Y., March 15, 1811. He was graduated at West Point in 1835 and assigned to the 2d infantry. In 1836 he was promoted to be 2d lieutenant, in 1839 1st lieutenant, and in 1847 captain. He was ordered to Mexico during the war, and in 1849 was brevetted major "for meritorious conduct while serving in the enemy's country." Resigning his commission in 1850, he retired to his farm in his native county, and in 1859 was appointed president of the state agricultural college. When the civil war broke out he accepted the office of inspector-general in the New York state militia, to assist in organizing the volunteers. He was appointed brigadier-general March 17, 1862, and now (Dec. 1862) commands a brigade in Gen. Doubleday's division of the 1st (Reynolds's, formerly Hooker's) army corps, with which he took part in the battle of Antietam.

PATTERSON, Robert, major-general of volunteers in the U. S. army, born in county Tyrone, Ireland, in 1792. He came to the United States at an early age, and was placed with a merchant of Philadelphia. When war was declared with Great Britain in 1812 he was appointed 1st lieutenant in the 22d infantry, transferred in May, 1813, to the 32d infantry, and made captain in 1814. At the close of the war he returned to commercial life, at the same time taking an active part in the state militia. At the commencement of the Mexican war he was appointed major-general of volunteers. In Dec. 1846, he marched from Matamoras to Tampico, embarked his troops for Vera Cruz March 1, 1847, commanded his division at the battle of Cerro Gordo, led the cavalry and advance brigades in the pursuit, and the next morning entered and took Jalapa. For his conduct in this engagement he received the thanks of Gen. Scott. After the peace he remained in retirement until the civil war of 1861, when he was selected by Governor Curtin to command the Pennsylvania three months' volunteers. He was immediately assigned to the command of a military department composed of the states of Pennsylvania, Delaware, and Maryland, and the District of Columbia. Early in June, 1861, he took command of the troops at Chambersburg, Penn., and then moved into Maryland, crossing the Potomac, June 15, at Williamsport. He was ordered to return to his own department, but after doing so again crossed the Potomac July 2, and pursued the confederate Gen. T. J. Jackson to Hainesville. The next day he advanced to Martinsburg, where he was obliged to wait for transportation, reënforcements, and artillery until July 15, when he marched to Bunker Hill, on his way thither defeating an advance guard of the confederates. When Gen. McDowell's army advanced into Virginia, Gen. Patterson was instructed to remain at Winchester to hold in check the superior forces of the confederate Gen. J. E. Johnston. His failure to do this, in consequence of which Johnston, reënforcing Beauregard on the field of Bull run, July 21, gave the victory to the confederates, exposed him to severe criticism. On July 27 he was honorably discharged from the service, the term of enlistment of his troops having expired.—**Francis Engle**, brigadier-general of volunteers in the U. S. army, son of the preceding, born in Philadelphia, May 7, 1821, died by the accidental discharge of a pistol in his own hands at Fairfax Court House, Va., Nov. 22, 1862. He was graduated at the university of Pennsylvania, and entered upon mercantile pursuits. When war was declared against Mexico, he joined McCulloch's corps of Texas rangers, from which he was appointed in June, 1847, to be 2d lieutenant in the 1st artillery. He was made 1st lieutenant in Oct. 1848, and captain in the 9th infantry in March, 1855. In 1849 he was sent to California and stationed at San Diego and San Luis Rey, and placed in charge of the construction of Fort Yuma, which he then commanded. He continued in active service in Mexico, California, and the territories until 1857, when he resigned his commission. When the civil war broke out in 1861 he was colonel of the 1st Pennsylvania volunteer artillery, which was the first regiment to march through Baltimore after the riot of April 19, and was then stationed at Poolesville and Edwards's ferry on the Potomac. He was made brigadier-general of volunteers April 11, 1862, joined Gen. McClellan at Yorktown, and was placed in command of the 2d New Jersey brigade, which at the battle of Williamsburg repulsed three assaults of the enemy. At the time of his death he was attached to Gen. Sigel's corps.

PAUL, Gabriel René, brigadier-general of volunteers in the U. S. army, born in Missouri, was graduated at West Point in 1834, and appointed brevet 2d lieutenant in the 1st infantry; became 1st lieutenant Oct. 26, 1836, and captain April 19, 1846; distinguished himself at Cerro Gordo and Contreras, and was brevetted major for gallantry at Chapultepec, Sept. 13, 1847; became major in the 8th infantry April 22, 1861, and lieutenant-colonel April 25, 1862; exhibited great gallantry in expelling the confederates from New Mexico in 1861; and was made brigadier-general of volunteers in Sept. 1862, and assigned to duty under Gen. Casey at Washington.

PEA RIDGE, a narrow plateau in the Boston mountains, Benton co., Ark., where was fought a battle, March 6, 7, and 8, 1862, between the U. S. forces under Gen. S. R. Curtis, and the confederates under Gen. Van Dorn. On March 1 Gen. Curtis's army was considerably depleted by the absence of several expeditions sent out for the purpose of capturing or routing various confederate bands in S. W. Missouri and N. Arkansas. Gen. Van Dorn took advantage of this state of affairs to march upon the principal Union camp, which was then near Sugar creek, Benton co. Gen. Curtis at once called in his scattered forces and concentrated them at Sugar creek, a short distance S. of Pea ridge. On the 6th, while Gen. Sigel was marching with his division from Bentonville, in obedience to these orders, his rear guard was attacked by a body of confederate troops; after a short though severe action, Sigel cut his way through, with a loss of 28 killed and wounded, meeting reënforcements sent by Gen. Curtis to his aid. This may be considered the opening engagement of the three days' battle. During the night of the 6th Gen. Van Dorn, knowing that the front of the Union position was strong, determined to attack its rear. The army of Gen. Curtis was situated on the main road from Fayetteville, Ark., to Springfield, Mo., and Gen. Van Dorn went westward around the camp at Sugar creek, entering the road again about 8 m. N. of it. Gen. Curtis discovered this design, and on the 7th determined to change his front to rear, thus fixing his left on Sugar creek hollow, bringing his centre across Pea ridge, and allowing his new right to rest on Cross Timber hollow. While this movement was in progress, early on the morning of the 7th, Col. Carr, on the right of the Union line, was furiously attacked by the confederate wing under Van Dorn and Price. At the same time Col. Osterhaus advanced from the Union centre with cavalry and artillery to break the reënforced line of the confederates; he was at first overpowered, but being strengthened recovered the ground, and a hard fight ensued between the divisions of Col. Davis and Gen. Sigel and several thousand of the confederates under McCulloch and McIntosh; it resulted in the complete rout of that portion of the confederates, and the death of both their generals. Meanwhile the Union right, under Col. Carr, being engaged with a superior force of the enemy, was compelled slowly to retire, having lost heavily, and the confederates encamped on the field. Thus the second day's fighting resulted in a partial defeat on the Union right, and a brilliant success in the centre, while the left had not been actually engaged. It was clear now to Gen. Curtis that the confederates had concentrated their main force upon their left wing. Col. Carr's division on the Union right was therefore reënforced by Col. Davis's command, and Gen. Sigel on the left changed his front so as to face the right flank of the confederate position with a formidable array of artillery. Van Dorn had planted some of his batteries on the top of a high hill sloping away toward the rear, but precipitous in front. At the right and left of the base of this hill infantry and artillery were placed, and the possession of this eminence would decide the fate of the day. When the action of the 8th commenced, at about 8 in the morning, the Union troops were thus posted in the form of an arc of a circle enclosing the confederates. For two hours a terrible fire of artillery was kept up by Sigel on their right, while Col. Davis and Col. Carr on the left steadily though slowly advanced; and at the end of a half hour more they showed signs of a desire to abandon their position on the hill. At this moment, one or two troublesome batteries at the base of the height having been silenced, a charge of two regiments was made, supported after a brief interval by an advance of the whole Union line; the result was a total rout of the confederates. Gen. Sigel followed them for 12 miles. A considerable quantity of ammunition, a large number of wagons, and 1,000 stand of muskets were captured. The Union loss, according to the official report of Gen. Curtis, was 203 killed, 972 wounded, and 176 missing. The confederate loss was nearly or quite equal, but the numbers are not accurately known. Among the confederate troops in this battle were about 5,000 Indians of the Choctaw, Cherokee, and Chickasaw tribes, under command of Gen. Albert Pike. After the action many of the Union dead were found to have been tomahawked, scalped, and mangled. Gen. Curtis addressed to Gen. Van Dorn a remonstrance upon the subject, and received assurances that the latter would unite with him in suppressing similar atrocities by stopping the employment of Indians, and punishing those who had already committed the alleged crime.—Another action took place, Oct. 22, 1862, in the neighborhood of Maysville, near the same point, between Gen. J. G. Blunt and a confederate force belonging to the army of Gen. Hindman. Gen. J. M. Schofield, in command of the army of the frontier, learning that the forces of Gen. Hindman were in camp at Pea ridge, despatched Gen. Blunt to attack them from the north-west, while he himself moved toward Huntsville, Ark., whence he could advance upon them from the south. Gen. Blunt came upon the force, numbering 7,000, near the old battle field of Pea ridge, and completely routed them, capturing all their artillery, supplies, and means of transportation. Gen. Schofield drove the broken columns into the Boston mountains, but could bring them to no action. The loss of life in this affair, which is sometimes called the battle of Maysville, was small on the Union side, though considerable upon the other.

PEACH ORCHARD. See Chickahominy.

PECK, John Jay, major-general of volunteers in the U. S. army, born in Manlius, Onondaga co., N. Y., Jan. 4, 1821. He was graduated at West Point in 1843, and brevetted a 2d lieutenant in the 2d artillery. Upon the breaking out of the Mexican war he was attached to Duncan's battery of flying artillery, and was present at the battles of Palo Alto and Resaca de la Palma, and at the siege of Monterey. In 1847 he joined the army under Scott at Vera Cruz, and at the storming of the batteries and works at Molino del Rey turned a captured gun upon the enemy with great effect. For his good conduct in this engagement he was brevetted a major, having previously received the brevet rank of captain for his services at Contreras and Churubusco. In 1853 he resigned his commission and settled in Syracuse, N. Y., as a banker. He was a member of the democratic national presidential conventions of 1856 and 1860, and in the former year an unsuccessful candidate for congress. Upon the breaking out of the civil war he offered his services to the president, was in Aug. 1861 appointed a brigadier-general of volunteers in the army of the Potomac, and accompanied his brigade to Yorktown, with the 4th army corps under Gen. Keyes. He arrived with reënforcements at a critical period of the battle of Williamsburg, and to the steadiness of his troops, who withstood repeated attacks from a greatly superior force, the preservation of the army from a rout was in a great measure attributed by Gen. Keyes in his official report. He commanded his brigade at the battle of Fair Oaks, where he had a horse shot under him; and during the siege of Richmond was intrusted with the defence of the Chickahominy below the railroad, and also of the White Oak swamp, covering the left flank of the army. On the morning of June 28 he commenced the flank movement toward the James river, by crossing the White Oak swamp and taking a position near Richmond, which he held in conjunction with Gen. Couch for two days, when both generals joined the forces under Gen. Porter on their march to the James river. During the movement of the army from Turkey creek to Harrison's Landing he commanded the rear guard. He was soon afterward appointed major-general, to date from July 4.

PEMBERTON, John C., a general in the service of the confederate states, born in Pennsylvania about 1818, was graduated at West Point in 1837, and appointed 2d lieutenant in the 4th artillery; became 1st lieutenant March 19, 1842; was aide-de-camp to Gen. Worth during the Mexican war; was brevetted captain for gallantry at Monterey, Sept. 23, 1846, and major for gallantry at Molino del Rey, Sept. 8, 1847; distinguished himself also at Contreras and Churubusco, and at the capture of the city of Mexico, in which he was wounded; became captain in Sept. 1850, and resigned April 29, 1861. He entered the confederate service as a brigadier-general, has served mainly in the South, and now (Dec. 1862) commands the army opposed to that of Gen. Grant in N. E. Mississippi. He is now a lieutenant-general.

PERRYVILLE, a village in Boyle co., Ky., about 45 m. S. of Frankfort, near which was fought on Oct. 8, 1862, a severe battle between the national forces under Gens. A. McD. McCook and Gilbert and a confederate army commanded by Gens. Bragg and Polk. During the retreat of the confederates through Kentucky in the early part of October, Gen. McCook's corps formed the left column of the pursuing national troops, and at 10 o'clock of the morning of the 8th two divisions of this body, commanded by Gens. Rousseau and James S. Jackson, encountered a superior confederate force at Chaplin's hill, between Mackville and Perryville, and in the immediate vicinity of the latter place. The two armies were formed confronting each other on opposite sides of the town, and shortly after midday the action opened between the skirmishers and artillery of either side. The left of the Union line was held by a brigade of raw troops of Jackson's division, commanded by Gen. Terrill, the centre and right by the division of Rousseau, and the remainder of Jackson's division was kept in reserve in the rear. At a considerable distance on the right was the corps of Gen. Gilbert. At about 1 o'clock in the afternoon the confederate right fell furiously upon the brigade of Terrill, which after a brief resistance broke and retired in confusion, leaving a battery in the hands of the enemy. Both Jackson and Terrill were killed while endeavoring to rally their troops, who took refuge behind the brigade of Starkweather. Here the progress of the confederates was stayed, while on the Union centre and right the troops of Rousseau held their position with great steadiness. Gilbert's troops, though separated by a considerable interval from McCook, rendered him efficient support at a critical period of the day, and resisted every effort of the enemy to force their position. For several hours the battle continued without material advantage to either side; but the great preponderance of the confederates in numbers becoming evident, Gen. McCook sent to Gen. Buell, who was some miles in his rear, for reënforcements. Before they could reach the field, the main Union line had retired a quarter of a mile to a favorable position on rising ground, and the battle was over, both armies bivouacking for the night within half a mile of each other. The last incident of the fight was a gallant charge by Carlin's brigade of Gilbert's corps, through the streets of Perryville, when a number of confederate prisoners and wagons were captured. By daybreak of the 9th the troops of Gen. Thomas L. Crittenden had joined McCook, and the enemy, apprehensive of being outnumbered, retired about the same time in the direction of Harrodsburg, leaving the field in the possession of the national troops. According to the official report of Gen. Bragg, five confederate divisions, commanded by Gens. Polk, Hardee, Cheatham, Buckner, and Anderson, participated in this battle, and their total loss amounted to upward of 2,500, which is probably an underestimate. The Union loss, according to the official report of Gen. Buell, amounted to 4,348.

PHELPS, John Wolcott, brigadier-general of volunteers in the U. S. army, born in Guilford, Vt., Nov. 13, 1813. He was graduated at West Point in 1836, and appointed brevet 2d lieutenant in the 4th artillery; performed several campaigns in Florida and the Cherokee Nation; became 1st lieutenant July 7, 1838; was offered a brevet as captain for gallantry at Contreras and Churubusco, which he declined; and became captain in March, 1850, while member of a board for preparing the present system of heavy artillery instruction, which was formed at his own suggestion. He then became commanding officer of Fort Brown, Texas, where he broke up a large fillibuster expedition against northern Mexico and Cuba. He served in the Utah expedition under Gen. A. S. Johnston, and resigned Nov. 2, 1859, being unwilling to have his services directed to the countenance and support of Mormonism, as he believed they were while holding his commission, and being dissatisfied with other demoralizing influences, growing out of the domination of slavery, to which in his judgment the army had become subject. He now took up his residence at Brattleborough, Vt., and in April, 1861, became colonel of the 1st Vermont volunteers. He established and commanded for some time the intrenched camp at Newport News near Fortress Monroe; was made a brigadier-general with rank from May 17, 1861; was attached to Gen. Butler's expedition to the gulf of Mexico, and sailed from Fortress Monroe Nov. 27, at the head of the advance of that expedition; landed at Ship island, Miss., Dec. 4, and issued a proclamation to the loyal citizens of the South-West, informing them that every slave state admitted into the Union since the adoption of the constitution had been so admitted in violation thereof; that the old slave states were bound by the highest considerations of honor and morality to abolish slavery; that slave labor and free institutions were incompatible; and that the motto of his command would be "Free labor and workingmen's rights." Gen. Butler, still in Massachusetts, at once disavowed this proclamation; but Gen. Phelps remained in command at Ship island until the departure of the expedition against New Orleans. He received, with Commander Porter of the navy, the surrender of Forts Jackson and St. Philip, April 28, and on May 1 assisted in taking possession of New Orleans. He soon afterward occupied the confederate works near Carrollton, 6 or 7 miles above the city, on the Mississippi, and while there became involved in a disagreement with Gen. Butler with regard to the disposition to be made of negroes who sought protection under the U. S. flag. Gen. Phelps desired to enlist and discipline them as soldiers, and had actually enrolled a considerable number of them, when Gen. Butler ordered him to abandon this military organization and employ the men in felling trees and other labor of that sort. On July 31 Gen. Phelps resigned, but Gen. Butler refused to accept his resignation. The war department however finally yielded to his desire, and he thus left the service Sept. 8, 1862, and returned to his residence at Brattleborough.

PHILIPPI, a small village of Barbour co., Va., on Tygart's Valley river, about 70 m. S. E. from Wheeling, where an engagement took place June 3, 1861, between the Union troops under Cols. Kelley, Dumont, and Lander, and the confederates under Col. G. A. Porterfield. The Union force marched from Grafton in two bodies, one under Col. Kelley going by a circuitous route in order to cut off the confederate line of retreat, and the other under Cols. Dumont and Lander marching more directly to make a simultaneous attack in front. Philippi was reached by the latter body early on the morning of

June 3, at which time it was held by about 2,000 troops; the Union force made a sudden attack, and at once put the confederates to flight, their retreat being made more disorderly by the appearance of Col. Kelley's command on their flank. The latter body, however, had been misled with regard to the road, and had come in at a point which did not allow them to capture the retiring enemy, who mostly escaped; a considerable amount of property was however taken. The Union loss was only 2 or 3 killed and wounded, among the latter being Col. Kelley. The confederates lost 16 killed, a large number wounded, and 10 prisoners.

PIKEVILLE, or PIKETON, the capital of Pike co., Ky., on the W. fork of the Big Sandy river, 160 m. E. S. E. from Frankfort. Early in Nov. 1861, Gen. Nelson ordered an advance to be made upon this place, where Col. John S. Williams was in command of 1,000 confederates. The advance was made in two columns, each consisting of about 2,500 men; the first left Prestonburg on Nov. 7 and marched by a circuitous route to cut off the confederate retreat; the second left the same point on the 8th, and moved by a direct road. When the latter body were 8 miles from Prestonburg they were attacked in a mountain gorge by 700 confederates; a fight of an hour and a half ensued, at the end of which time the confederates were dispersed, 30 of their dead being left on the field; the Union loss was 6 killed and 24 wounded. As the defeated troops retired they destroyed bridges and obstructed roads, thus delaying the advance of Gen. Nelson, who did not reach Pikeville till Nov. 10. In the mean while the force which first left Prestonburg had marched without noteworthy molestation, having only one or two slight encounters with skirmishing parties, and had reached Pikeville on the 9th, finding the last of the confederate troops just evacuating the town.

PITTSBURG LANDING. See SHILOH.

PLEASONTON, ALFRED, brigadier-general of volunteers in the U. S. army, born in Washington, D. C., in Jan. 1824. He was graduated at West Point in 1844, in the same class with Gens. Buckner and Hancock, and appointed brevet 2d lieutenant in the 1st dragoons. He was promoted to be full 2d lieutenant in the 2d dragoons in 1845, and ordered to Corpus Christi, whence he marched with the army of occupation to the Rio Grande. He was brevetted 1st lieutenant for a gallant charge upon the enemy's batteries at Resaca de la Palma. In the spring of 1849 he proceeded to California to report for duty on the staff of Gen. Persifor F. Smith, and in the same year was commissioned 1st lieutenant. He afterward served in New Mexico and Texas, and in 1854 was ordered to Fort Leavenworth. In 1855 he was promoted to be captain. He was acting assistant adjutant-general to Gen. Harney during the Sioux expedition, and adjutant-general to the same officer from 1856 to 1860 in his campaign against the Seminoles in Florida and his operations in Kansas, Oregon, and Washington territories. In March, 1861, he was ordered to Utah, but returning to the east with the troops in the autumn of the same year, acted as colonel of the 2d cavalry in the army of the Potomac, and was promoted to be major of the same regiment in Feb. 1862. He served through the campaign on the peninsula of Yorktown, was made brigadier-general of volunteers July 16, 1862, and took command of Gen. Stoneman's cavalry brigade. After the battle of Antietam he was assigned to pursue the retreating enemy, was subsequently despatched to intercept Gen. Stuart's rebel cavalry on the return from their raid into Pennsylvania, and when McClellan crossed the Potomac into Virginia toward the end of October, he led the vanguard with a flying column composed of 3 regiments of cavalry and a battery of flying artillery.

PLUMMER, JOSEPH B., brigadier-general of volunteers in the U. S. army, born in Massachusetts about 1822, died in Oct. 1862. He was graduated at West Point in 1841 and appointed 2d lieutenant in the 1st infantry; became regimental quartermaster Jan. 1 and 1st lieutenant March 15, 1848, and captain May 1, 1852; rendered valuable service to Gen. Lyon in the capture of Camp Jackson at St. Louis, May 10, 1861; commanded a battalion of regulars in the battle of Wilson's creek, Mo., Aug. 10; became colonel of the 11th Missouri volunteers, commanded at Cape Girardeau, Mo., and defeated Jeff. Thompson at Fredericktown, Mo., Oct. 21, killing 158 and capturing 42 prisoners and one cannon; was made brigadier-general Oct. 22, 1861; participated in the capture of New Madrid and Island No. Ten, and served under Gen. Pope in the campaign about Corinth, Miss., until July, 1862, when he obtained leave of absence on account of ill health, from which he never recovered.

POCOTALIGO, a village of Beaufort district, S. C., about 35 m. N. from Hilton Head and 60 m. S. W. from Charleston. Toward this place an expedition comprising about 4,500 men with several pieces of artillery, under the command of Gens. Brannan and Terry, was despatched from Hilton Head on the night of Oct. 21, 1862, for the purpose of reconnoitring Broad river and its tributaries, of learning the strength of the confederate forces on the mainland, and of destroying as much of the Charleston and Savannah railroad, which passes near Pocotaligo, as could be effected in a single day. The troops landed at Mackay's point, at the confluence of the Pocotaligo and Broad rivers, early on the morning of the 22d, and thence marched toward the railroad, 12 m. distant. Seven miles from the landing place the head of the column was assailed by a murderous fire of grape and shrapnel from a battery of 12 pieces so posted as to completely command the road. After a sharp fight the enemy, who were in large force, were driven back to a second position, and thence to a bridge crossing the Pocotaligo, about half a mile from the village. This structure they immediately destroyed, and the national troops, being without the means to cross and having exhausted their ammunition, were compelled at about 6 P. M. to return to their transports. The retreat was accomplished in perfect order. A force of 500 men under Col. Barton had meanwhile proceeded up the Coosawhatchie river, and attacked the town of Coosawhatchie, through which passes the railroad. They fired into a train loaded with confederate troops, killing and wounding a number, tore up a portion of the track, cut the telegraph wires, and retired at the approach of a large force with heavy artillery. The total Union loss in these several engagements was between 500 and 600; that of the confederates, owing to their superiority in position and in artillery, was much less.

POLK, Leonidas, bishop of the Protestant Episcopal church and general in the service of the confederate states, 2d cousin of the late President Polk, born in Raleigh, N. C., in 1806, was graduated at West Point in 1827 and appointed brevet 2d lieutenant of artillery, and resigned Dec. 1 following. He now studied theology, was ordained deacon in the Episcopal church in 1830, and officiated as a clergyman from 1831 till 1838, when he became missionary bishop of Arkansas and the Indian territory south of 36° 30′, with provisional charge of the dioceses of Alabama, Mississippi, and Louisiana, and the missions in the republic of Texas. This office he retained till 1841, when he was chosen bishop of Louisiana, which he still is, his residence being in Lafourche parish, where he has extensive plantations. In July, 1861, having been solicited by the highest military and civil authorities of the confederate government, he accepted the commission of major-general in the provisional confederate army, his department extending from the mouth of the Arkansas on both sides of the Mississippi to the extreme northern limit of the confederate states. He fixed his head-quarters at Memphis, and issued a general order, July 13, declaring that the invasion of the South by the federal armies "comes bringing with it a contempt for constitutional liberty and the withering influence of the infidelity of New England and Germany combined." On Sept. 4 he transferred his head-quarters to Columbus, Ky., which place he now occupied with 1,000 men and fortified. He was nearly killed by the explosion of a 128-lb. gun, Nov. 11. He remained in command at Columbus until its evacuation, March 1, 1862, when he proceeded to join Beauregard's army at Corinth, which place he reached at the head of two divisions about March 15. He took part in the battle of Shiloh, served afterward under Bragg, and commanded the 2d army corps when that general invaded Kentucky in Sept. 1862. He has since been made a lieutenant-general.

POPE, John, major-general of volunteers and brigadier-general in the U. S. army, born in Kaskaskia, Ill., March 12, 1823. His father was Governor Nathaniel Pope of Virginia, who removed to Kentucky, afterward settled in Illinois, was a delegate to congress from Illinois before its organization as a state in 1818, and was afterward a district judge. The son was graduated at West Point in 1842 and appointed brevet 2d lieutenant in the corps of topographical engineers. In the Mexican war he was attached to the army under Gen. Taylor. At the battle of Monterey he won a commission as 1st lieutenant, bearing date Sept. 23, 1846; and for gallant and meritorious conduct at Buena Vista was brevetted a captain, his commission being dated Feb. 23, 1847. In 1849 he conducted the Minnesota exploring expedition; having accomplished which, he was intrusted with the conduct of an expedition sent out by the government to test the feasibility of boring artesian wells in the celebrated Llano Estacado or Staked Plain, stretching between Texas and New Mexico. In 1853 he was assigned to the command of one of the expeditions to survey the route of the Pacific railroad. From 1854 to 1859 he was engaged in exploring the Rocky mountains, during which time (July 1, 1856) he took the actual rank of captain. In the political campaign of 1860 Capt. Pope sympathized with the republicans; and in an address on the subject of "Fortifications," read before a literary society at Cincinnati, he satirized the policy of President Buchanan in unsparing terms. For this he was court-martialled, but upon the recommendation of Mr. Holt, postmaster-general, the matter was dropped. He was still a captain in the engineers when the civil war broke out in 1861, and was one of the officers detailed by the war department to escort Mr. Lincoln to Washington. He was made brigadier-general of volunteers, May 17, 1861, and appointed to a command in Missouri. Gen. Pope's operations in that state, protecting railway communication, and driving out guerilla parties, were attended with great success. The most important engagement with which he was then connected was that at Blackwater, where, by the coöperation of Col. J. C. Davis, a considerable number of prisoners were taken and their army routed. Gen. Halleck intrusted him with the command of the land force destined to coöperate with Flag Officer Foote's flotilla. At the head of a well appointed force he left Commerce, Mo., marched on New Madrid, captured that place, and after the surrender of Island No. Ten captured a large number of prisoners. On March 21, 1862, he was appointed major-general of volunteers. When Gen. Halleck assumed command of the army on the upper Tennessee in April, he ordered Gen. Pope to Pittsburg Landing, and gave him a position on the extreme left of the national lines, in command of one of the three grand divisions into which the Union forces were divided. He vigorously pursued the enemy after the evacuation of Corinth, and was afterward summoned to Washington and assigned (June 26, 1862) to the command of the army of Virginia, consisting of Fremont's (afterward Sigel's), Banks's, and McDowell's corps. He was commissioned brigadier-general in the regular army, July 14. On Aug. 9 a division of his army under Gen. Banks had a severe engagement with the confederates, commanded by Jackson, at Cedar mountain. On the 17th and 18th Gen. Pope drew back his whole force across the Rappahannock. From this date for 15 days Gen. Pope, who had been reënforced by a portion of the army of the Potomac, fought continuously a greatly superior force of the enemy under Gen. Lee, on the line of the Rappahannock, at Manassas Junction, at Gainesville, and at Germantown near Chantilly (see Bull Run), in which last named battle Gens. Kearny and Stevens were killed. Gen. Pope withdrew his force behind Difficult creek between Flint hill and Warrenton turnpike, from which position he retired within the fortifications of Washington, and on Sept. 3 was at his own request relieved of the command of the army of Virginia, and was assigned to that of the department of the North-West, where in a short time he completely checked the outrages of the Indians of Minnesota. Returning to Washington in December, he testified before the court martial called for the trial of Gen. Fitz John Porter, accused by him of misconduct before the enemy at the second battle of Bull run.

PORT REPUBLIC, a village of Rockingham co., Va., on the Shenandoah, about 90 m. S. W. from Winchester, where on June 9, 1862, was fought a severe battle between the confederate army under Gen. T. J. Jackson and a portion of the national forces commanded by Gen. Shields. On the night of the 8th Jackson, defeated at Cross Keys by Fremont, continued his retreat up the valley of the Shenandoah in the direction of Port Republic, 5 m. distant, hoping to cross the river at that place before the arrival of Shields, who, he was informed by his scouts, was hastening to cut him off. He was anticipated however by Col. Carroll, commanding a brigade of Shields's division, who entered Port Republic on the morning of the 8th, driving out a small body of the enemy. Carroll had been ordered to burn the bridge over the Shenandoah, but having concluded to hold it, he placed his guns in a position to command the passage. Early in the morning of the 9th Jackson's advance guard reached the river and opened a heavy artillery fire upon the national troops, under cover of which a confederate cavalry force crossed. Repeated but unavailing efforts were now made by Carroll to destroy the bridge, the importance of which to the retreating confederates, who, notwithstanding the arrival of Tyler's brigade to his assistance, outnumbered him 5 or 6 to 1, became apparent. In every instance the Union troops were driven back by the severity of the enemy's fire; and finally after an obstinate resistance they were compelled to retreat down the valley toward the main body of Shields's division. Jackson improved the opportunity to convey his whole force across the river, and was soon beyond pursuit of Fremont or Shields. Had the bridge been destroyed by Carroll, the confederates might have been overpowered by Fremont and their whole army dispersed or captured. The losses on both sides in the battle at Port Republic were severe.

PORT ROYAL, an island on the coast of South Carolina, in St. Helena parish, Beaufort district, about 50 m. S. W. from Charleston, and 40 m. N. E. from Savannah. It is the centre of the rich sea island cotton region, but derives its chief importance from its admirable harbor, called variously Port Royal sound or entrance, or Broad river, an estuary of considerable width on its S. side, which affords anchorage for vessels drawing 23 feet of water. The population consists chiefly of negroes, and the principal village is Beaufort. Ten miles seaward from Port Royal entrance lies Port Royal bar, about 2 m. in width, and which is crossed by a devious and difficult channel.—The national government, having determined soon after the commencement of the civil war to occupy one or more places on the southern Atlantic seaboard, within the territory of the seceded states, fixed upon Port Royal as a chief naval rendezvous, and during the summer and autumn of 1861 preparations were made for a joint naval and military expedition thither. On Oct. 21 the land forces, numbering about 15,000 men, under Gen. T. W. Sherman, were embarked at Annapolis, and proceeded to Fortress Monroe, where the fleet of war vessels under Flag Officer Du Pont, with which they were to coöperate, had assembled. On the 29th the whole fleet of transports and ships of war, comprising upward of 50 sail, weighed anchor and stood out to sea, the destination of the expedition being then unknown except to the commanders. On the afternoon of Nov. 1 a heavy gale set in, which raged with unusual fury for 30 hours, dispersing the fleet in all directions, and causing the loss of several transports and of a quantity of valuable material, beside several lives. As the storm abated the ships resumed their course, and on the 4th the steam frigate Wabash, the flag ship of the squadron, with many other vessels, arrived off Port Royal bar. Means were immediately taken to find the channel over the bar and replace the buoys removed by the confederates; and on the afternoon of the same day the gunboats and transports of light draught were sent over, dispersing a fleet of small confederate steamers under Commodore Tatnall which sought to obstruct their progress. A reconnoissance subsequently discovered the fact that Hilton head and Bay point, commanding the N. and S. sides of Port Royal entrance, which is about 2½ m. wide, were protected by works of great strength, scientifically constructed and mounted with guns of heavy caliber. Fort Walker on Hilton head, the defence mainly relied upon by the confederates, mounted 23 pieces, several of which were rifled; and on Bay point were Fort Beauregard and a battery half a mile distant, armed with 19 guns. On the 5th the Wabash and the large frigates and transports crossed the bar, and after a second reconnoissance Du Pont determined to make the attack on the succeeding day, and to direct his chief efforts against Fort Walker. The 6th proving stormy, the attack was deferred to the 7th. At 9½ A. M. of that day the fleet formed in two columns, of which the larger was headed by the Wabash, stood into Broad river, steaming close to Bay point as they passed up, and pouring broadsides into Fort Beauregard, and then turning and attacking Fort Walker on their return. Their course thus described an ellipse between the forts, and by concentrating his fire upon each work in turn, and continually shifting his position, Du Pont expected to inflict upon the enemy the greatest possible amount of damage with the least danger to himself. At 10 o'clock the action became general, and for 4 hours a continuous stream of shot and shell was poured into the forts. The Wabash, directed by Du Pont in person, was carried by the soundings as close as possible to the shore, and her heavy guns, directed with great deliberation, played with terrible effect upon the enemy, while she herself was a prominent target for the fire of either fort, although her loss was inconsiderable. The flag officer estimated that he saved 100 lives by keeping under weigh and bearing in close. After the first circuit a number of the smaller vessels took a position from whence they could pour a destructive enfilading fire on the weak left flank of Fort Walker, leaving the Wabash with 2 or 3 other ships to follow the original plan of attack. At 2 P. M. the enemy's fire began to slacken, and soon after they were discovered in rapid flight from Fort Walker toward a neighboring wood. A detachment immediately landed and took possession of the work, and on the succeeding day Fort Beauregard, which had about the same time been evacuated, was also occupied by the national troops. The casualties of the fleet did not exceed 31; those of the enemy are not known, but are supposed to have been much greater. They abandoned every thing in their flight except their muskets. Forty-eight guns and a large quantity of material of war fell into the hands of the national forces. The village of Beaufort was soon after taken possession of, and the whole island with the surrounding territory and harbors have since remained in the hands of the national government. At Hilton head extensive works, with hospitals and other buildings, have been erected, and the point has served as a base of operations against Savannah, Charleston, and other places. During the summer and autumn of 1862 it was visited by yellow fever, which in the neighborhood of the government buildings was developed in a malignant type, and proved fatal in many cases. Of the negroes previously attached to the neighboring plantations several thousands have sought protection within the Union lines, where they are fed, clothed, instructed in the elementary branches of knowledge, and in some instances employed at regular wages. One or more regiments of negroes have also been organized, which, so far as they have been tested, have proved themselves efficient soldiers.

PORTER, Andrew, brigadier-general of volunteers in the U. S. army, born in Pennsylvania, entered the military academy in 1836, but left it the next year. He was appointed 1st lieutenant of the mounted rifles in 1846, was distinguished at the battle of Cerro Gordo, was made captain in 1847, and in August of the same year was brevetted major for gallant and meritorious conduct in the battles of Contreras and Churubusco. In Sept. 1847, he was brevetted lieutenant-colonel for gallantry at Chapultepec. He afterward served in Texas and the South-West, and in 1860 was in command of Fort Craig. At the breaking out of the civil war in 1861 he was ordered to Washington, and promoted to the command of the 16th infantry. He had charge of a brigade at the battle of Bull run, and when Col. Hunter was wounded succeeded him in the command of the 2d division. He was soon after the battle appointed brigadier-general of volunteers, his commission dating from May 17, and was made provost marshal general of Washington. He subsequently held the same appointment for the army of the Potomac, but after Gen. McClellan's retreat from the Chickahominy to the James river was relieved from duty with that army. In the autumn of 1862 he was ordered to Harrisburg, Penn., to assist in organizing and sending forward troops. Early in November he was assigned to command in the state of Pennsylvania, and charged with the duties of provost marshal general.

PORTER, David D., an American naval officer, youngest son of Commodore David Porter, born in Philadelphia, entered the navy as midshipman in Feb. 1829, cruised in the Mediterranean under Commodore Biddle until 1831, and after a year's leave of absence returned to the same station with Commodore Patterson. He passed his examination in 1835, was attached to the coast survey service from 1836 to 1841, became lieutenant in the latter year, and was ordered to the frigate Congress, in which he cruised in Mediterranean and Brazilian waters for 4 years. In 1845 he was ordered to the national observatory at Washington. During the Mexican war he was placed in charge of the naval rendezvous at New Orleans; then returned to the coast survey; and from 1849 to 1853 was in command successively of the California mail steamers Panama and Georgia. He was now variously employed until 1861, when he was raised to the rank of commander, put in command of the steam sloop Powhatan, and sent to Pensacola to join the gulf blockading squadron. When the expedition against New Orleans was about to sail in 1862, he was ordered home and placed in charge of a mortar flotilla, comprising 21 mortar boats and several steamers, with which he coöperated with Flag Officer Farragut in the capture of the Mississippi forts and the unsuccessful attack upon Vicksburg. He was afterward ordered with his flotilla to the James river, and in October was placed in command of the Mississippi gunboat flotilla, with the rank of acting rear admiral.—WILLIAM D., brother of the preceding, born in Louisiana about 1809, was appointed to the navy from Massachusetts in 1823. At the beginning of the civil war he was cruising on the Pacific station in the sloop of war St. Mary's, with the rank of commander. His loyalty being suspected, he wrote to the government a letter in his defence, which was published and excited much comment. Subsequently he was ordered to the Mississippi to assist in fitting out the gunboat flotilla, and placed in command of the Essex, which he caused to be covered with iron plates. He took part in the attack on Vicksburg, and afterward engaged the iron-clad confederate gunboat Arkansas near Baton Rouge. The machinery of the Arkansas becoming deranged, she was blown up by her own commander. For his share in this action Commander Porter was nominated to be commodore.

PORTER, FITZ JOHN, major-general of volunteers and brevet brigadier-general in the regular army of the United States, born in New Hampshire, was graduated at West Point in 1845, receiving a brevet as 2d lieutenant in the 4th artillery, and was promoted to be 1st lieutenant in May, 1847. Accompanying his regiment to Mexico, he won the brevet ranks of captain and major for gallantry at Molino del Rey and Chapultepec, and at the battle of the Belen gate was severely wounded. After the peace he was appointed assistant instructor of artillery at West Point, became adjutant at the military academy in 1853, and assistant instructor of cavalry and artillery in 1854. In June, 1856, he was appointed assistant adjutant-general, with the rank of captain, and two months later received promotion to a captaincy and relinquished his rank in the line. When the civil war broke out he was made colonel of the 5th infantry, one of the new regiments added to the regular army. Some time afterward he was appointed brigadier-general of volunteers, his commission dating from May 17, and was assigned to service with the army of the Potomac, to which his command has ever since belonged. He was soon placed at the head of a division, and when the army was divided into corps just before the opening of the Chickahominy campaign, he was assigned to the command of the 5th corps. He directed the siege works before Yorktown, and was governor of that place for a short time after its evacuation. When the army before Richmond fell back from the Chickahominy to the James river, Gen. Porter commanded the extreme right, and received the fiercest attacks of the enemy. For his services in this campaign he was promoted to be major-general of volunteers, July 4, and brevet brigadier-general in the regular army, to date from June 27. He led the retreat when Gen. McClellan moved from Harrison's Landing to Fortress Monroe, and was temporarily attached to Gen. Pope's command during the battles which immediately followed between the Rappahannock and Washington. His conduct in these engagements was severely blamed by Gen. Pope in his official report, and formal charges were made against him, and Gen. Porter was in consequence deprived of his command, but at the request of Gen. McClellan he was restored to duty, and participated in the Maryland campaign, commanding the reserve in the battle of Antietam. In November he was relieved and ordered to Washington for trial by court martial, which is not yet concluded (Dec. 20, 1862).

PRATT, CALVIN E., brigadier-general of volunteers in the U. S. army, born near Worcester, Mass., in 1828. He studied law, practised for some years in Worcester, took a prominent part in politics, and was a member of the Cincinnati convention which nominated Mr. Buchanan for president. In 1859 he removed to New York city, where he pursued his profession until 1861, and then raised the 31st regiment New York volunteers, which he commanded at the first battle of Bull run, being attached to Col. Davies's brigade in Col. Miles's division. His regiment was afterward assigned to Newton's brigade in Franklin's division, and took part in the battles on the peninsula, the second battle of Bull run, and the battle of Antietam; and after the last mentioned engagement he was nominated brigadier-general of volunteers. He commands a brigade in Gen. Howe's division of the 6th army corps, now under Gen. W. F. Smith, in Maj. Gen. Franklin's grand division.

PRENTISS, BENJAMIN MAYBERRY, brigadier-general of volunteers in the U. S. army, born at Belleville, Wood co., Va., Nov. 23, 1819. In 1835 he removed with his father to Missouri, and in 1841 to Quincy, Ill., where he has ever since resided, working for several years as a ropemaker, and afterward engaging in the forwarding and commission business. In 1844–'5 he was 1st lieutenant of a company in the force sent to quell the Mormon difficulties in Hancock co., Ill. He held the same rank in the 1st Illinois volunteers during the Mexican war, and rose to be captain. In 1860 he was an unsuccessful republican candidate for congress. When the war broke out in 1861, he was chosen colonel of the 7th Illinois regiment, and afterward brigadier-general of the 3 months' troops, having for a time commanded at Cairo, Ill. At the end of their term of service the president appointed him brigadier-general of volunteers, to date from May 17, 1861. He served in Missouri until April, 1862, when he joined Gen. Grant's army 3 days before the battle of Shiloh, at the beginning of which he was taken prisoner with a large part of his command. He was released in October, and is now (December) a member of the court martial for the trial of Gen. Fitz John Porter at Washington.

PRESTON, William, a general in the service of the confederate states, born near Louisville, Ky., Oct. 16, 1816. He studied at the Jesuits' college of St. Joseph's at Bardstown, Ky., and afterward at New Haven, and was graduated in 1838 at the law school of Harvard university. He settled at Louisville in the practice of the law, which he continued until Oct. 1847, when he entered the U. S. military service as lieutenant-colonel of the 4th Kentucky volunteers. He was honorably discharged in July, 1848, at the conclusion of the war with Mexico, when he returned to his professional labors, and was chosen a member of the convention to revise the constitution of the state, which met at Frankfort, June 11, 1850. In 1850 and 1851 he was a member of the state legislature, and in 1852, being then a member of the whig party, he advocated the election to the presidency of Gen. Scott; but the progress of the controversy respecting slavery, resulting from the Kansas-Nebraska bills of 1854, afterward led him to attach himself to the democratic party, and in 1856 he was a member of the national convention at Cincinnati, by which Mr. Buchanan was nominated for the presidency, a measure in which he heartily concurred. On the resignation by Mr. Augustus Cæsar Dodge of the office of envoy extraordinary at the court of Spain, President Buchanan appointed Mr. Preston to that post, March 12, 1859. In the beginning of the year 1861 he resigned his office without waiting to be superseded by the administration of President Lincoln, and returning to Kentucky used his influence to induce the people of the state to take sides with the southern confederacy. In Nov. 1861, he was chosen by the so called sovereignty convention, which met at Russellville, a commissioner to visit Richmond, and negotiate with the confederate government for the admission of Kentucky into the confederacy. He was subsequently appointed a brigadier-general in the confederate army. He served under Gen. Bragg during the invasion of Kentucky by the confederates in Sept. 1862. A private letter of his, which fell into the hands of the U. S. officers in Nov. 1862, exhibited great despondency with regard to the confederate cause. Previous to the civil war he was believed to be one of the richest men in Kentucky.

PRICE, Sterling, a general in the service of the confederate states, born in Virginia, emigrated to Missouri, and was a representative in congress from the 3d district of that state during the first two years of President Polk's administration. He commanded the 2d regiment of Missouri volunteers in the Mexican war, and was appointed brigadier-general of U. S. volunteers July 20, 1847. He was governor of Missouri from 1853 to 1857, including the period of the so called "border ruffian war" between the Missourians and the settlers of Kansas; and he was bank commissioner of the state when the civil war commenced in 1861. Being a leader of the ultra pro-slavery and secession party in Missouri, he was chosen president of the state convention, Feb. 28, 1861, and was naturally selected as a military chief by those who had determined to separate the state from the federal Union; and as general-in-chief of the militia of the state, acting in concert with Gov. C. F. Jackson, he began in April to take measures looking to that end. The legislature voted, May 10, to call out the militia, but on May 21 Price made an agreement with Gen. Harney, then commanding the U. S. forces in the state, in which he pledged himself to maintain order among the people. Gen. Harney insisted that he must dismiss the troops called out under the recent act of the legislature; but Price refused, though on June 4 he issued a proclamation to the brigadier-generals of militia commanding military districts in Missouri, stating that he should adhere to his agreement. On June 11 he held an interview with Gen. Lyon and Col. Blair, but no pacific result was arrived at, after which active warlike operations at once began. Gen. Lyon proceeded into the interior with the U. S. forces at St. Louis. Price retreated from Jefferson City, hitherto his head-quarters, to Booneville, but, being opposed to making a stand there, withdrew before the battle of June 17; fought in the battle of Wilson's creek, Aug. 10, where Ben McCulloch commanded; attacked Lexington Sept. 17, took it after three days' fighting on the 20th, with 3,500 prisoners, and evacuated it Oct. 5, before the advance of Gen. Fremont, receiving for its capture the thanks of the confederate congress in December; issued a proclamation from Neosho in November calling for 50,000 volunteers; visited Richmond during the ensuing winter, and was transferred from the service of Missouri to that of the confederate states, with the rank of major-general; was one of the principal generals in the battle of Pea ridge, March 6, 7, 8, 1862, where he was wounded; joined the army east of the Mississippi, and fought at Iuka Sept. 20, and at Corinth Oct. 3, 4, 5; and now (Dec. 1862) commands the advance of the army in northern Mississippi under Lieut. Gen. Pemberton, opposed to the U. S. forces under Major-Gen. Grant. He is regarded as a general of great ability.

PRIM, Don Juan, count of Reus, a Spanish general and statesman, born in 1814 in a village of Catalonia. Upon the outbreak of the civil war in Spain, he entered the army of the queen, in 1833 distinguished himself in Catalonia, and soon became in succession colonel and general. Peace being concluded, he declared himself in favor of the *progresistas* and of Espartero; but after a while he with the more advanced portion of his party united with the *moderados* for the expulsion of Espartero. When, in 1843, Reus, Barcelona, and other towns rose for the constitution of 1837 and for Espartero, and the captain-generals showed no energy, Prim compelled the captain-general of Catalonia to give him troops, and in a short time suppressed the insurrection, for which exploit he was created count of Reus. In 1844 his opposition to the use which the moderados attempted to make of their common victory led to his sudden arrest, the moderados charging him with being privy to a plot against Narvaez, Concha, and other generals, and he was sentenced to 6 years' imprisonment in a fort of the colonies. He was, however, pardoned by the queen in 1845, and appointed governor-general of Porto Rico, and retained the office for one year, but remained upon the island until 1849. Failing to receive an appointment, he was elected to the cortes, when he again acted with the opposition. In order to remove him from Madrid, the ministry assigned him a diplomatic mission to Paris, which he however declined, preferring to go to Turkey, and being an eyewitness of the oriental war. In 1854 he was recalled to Madrid, and in 1855 appointed captain-general of Granada. In 1857, being subjected to another prosecution, he was sentenced to 5 years' imprisonment in a fort, yet soon pardoned, and in 1860 appointed inspector-general of engineers. In the war against Morocco (1859–'60) he commanded the reserve, and took a prominent part in the battles and in the success of the Spanish army. In the English, Spanish, and French expedition against Mexico in 1861, Gen. Prim was appointed commander-in-chief of the Spanish army of invasion, and as such concluded with the Mexicans the treaty of Soledad, in consequence of which Spain and England withdrew from the invasion. In a letter to the emperor Napoleon, which made considerable sensation, Gen. Prim sharply criticized the French policy in Mexico.

PRINCE, Henry, brigadier-general of volunteers in the U. S. army, born in Eastport, Me., Jan. 19, 1811. He was graduated at West Point in 1835 and appointed brevet 2d lieutenant in the 4th infantry, became 1st lieutenant in 1838, and being ordered to Mexico when the war began, won two brevets for gallant conduct in the battles of Contreras and Churubusco, and of Molino del Rey, where he was severely wounded. He was promoted to be captain in 1849, and appointed paymaster, with the rank of major, in 1855. On April 28, 1862, he was appointed brigadier-general of volunteers. He was assigned to the army of Virginia under Major-Gen. Pope, and was taken prisoner at the battle of Cedar mountain, Aug. 9, 1862, but was released on parole toward the end of September.

PRYOR, Roger A., a general in the service of the confederate states, born about 1825 in Richmond, where his father was a prominent Presbyterian clergyman, studied law, and became in 1850 editor of the "South-Side Democrat," a newspaper published at Petersburg, Va. In 1852 he was attached to the staff of "The Union" newspaper at Washington, but was dismissed in the autumn of 1853 on account of an article on Russia, regarded as improper in the official organ of the administration, as it displayed a strong partiality for Russia in her contest with England and France. In 1854 he was appointed by President Pierce commissioner to Greece, and in 1855 he resumed his editorial functions at Petersburg, after which he was editor of "The South" at Richmond, and then of "The States," an advocate of extreme southern views at Washington. In 1859 he was elected from the 4th district of Virginia a representative in congress, to fill a vacancy caused by the death of the Hon. W. O. Goode. In congress he was distinguished as a vehement advocate of the secession party, and became widely known by challenging, April 12, 1860, the Hon. John F. Potter of Wisconsin, on account of some words that had passed between them in the course of debate in the house. Mr. Potter accepted the challenge, saying that he disapproved of duelling, but would meet Mr. Pryor with bowie knives, weapons with which the parties would be equal. This Mr. Pryor's second declined, on the ground that bowie knives were barbarous, and unusual among gentlemen; whereupon Col. Lander, Mr. Potter's second, offered, without the knowledge of his principal, to fight Pryor with any weapons which the latter would select. This Mr. Pryor also declined, on the ground that he had no quarrel with Lander, and there the affair ended. Previous to this Mr. Pryor had fought a duel in Virginia with a man named Johnson; he had also challenged the Hon. J. M. Botts, who refused to fight him; and had himself declined a challenge from a son of Gov. William Smith, who complained that he had insulted his father. On the approach of the civil war in 1861, Mr. Pryor early declared himself in favor of an appeal to arms if necessary to secure the independence of the South, and going to Charleston, S. C., served as a volunteer aide-de-camp to Gen. Beauregard during the reduction of Fort Sumter. He now holds the rank of brigadier-general.

Q

QUEKETT, John, an English microscopist, born at Langport, Somersetshire, in 1815, died at Pangbourne, Berkshire, Aug. 20, 1861. At the age of 16 he gave a course of lectures on microscopic science, illustrated by diagrams, and by a microscope which he had constructed from a common roasting jack, a lady's parasol, and some pieces of brass picked up at a junk shop. With this instrument he made some important discoveries. In 1831 he entered London hospital as a student, and was apprenticed to his brother Edwin, who was then lecturer on botany to the hospital. On the completion of his course he became a licentiate of the apothecaries' company, and member of the royal college of surgeons. The latter body having established a studentship of human and comparative anatomy, he was unanimously elected to it, when he immediately commenced the formation of a most elaborate and valuable cabinet of preparations in microscopic anatomy. Three years later he was appointed assistant conservator of the Hunterian museum, and on Professor Owen's retirement was elected conservator of the museum and professor of histology, and filled both offices till his death. He published about 1848 an elaborate "Practical Treatise on the Use of the Microscope," and in 1854 "Lectures on Histology" (2 vols. 8vo.).

QUINBY, Isaac F., brigadier-general of volunteers in the U. S. army, born in New Jersey, was graduated at West Point in 1843, and appointed brevet 2d lieutenant in the 2d artillery; transferred to the 3d artillery Dec. 20, 1845; was acting assistant professor of natural and experimental philosophy at West Point from Aug. 28, 1845, till June 11, 1847; became 1st lieutenant March 3, 1847; served with his regiment in Mexico, and was adjutant and regimental quartermaster from Oct. 24, 1848, till March 16, 1852, when he resigned and became professor of mathematics and natural philosophy in Rochester university. On the outbreak of the civil war in 1861, he left his professorship to become colonel of the 13th New York volunteers, raised in Rochester, at the head of whom he fought gallantly at Bull run, July 21. Subsequently resigning and resuming his professorship, he remained at Rochester until Gen. Halleck had commenced his campaign in Tennessee and Mississippi, when he was, at the desire of that commander, appointed brigadier-general, March 17, 1862, and placed in command of the district of the Mississippi, including the important post of Columbus, Ky., which place he occupied until Oct. 26, when he took command of the 3d division of the army of the Mississippi, at Corinth.

R

RAINS, Gabriel James, a general in the service of the confederate states, born in North Carolina, was graduated at West Point in 1827 and appointed 2d lieutenant in the 7th infantry; became 1st lieutenant Jan. 28, 1834, and captain Dec. 25, 1837; was brevetted major for gallantry in an action with the Seminoles in Florida, April 28, 1840, where he was wounded; became major in the 4th infantry March 9, 1851; served in Washington territory in 1855, and was appointed by the acting governor brigadier-general of the territorial volunteers; became lieutenant-colonel of the 5th infantry; resigned his commission July 31, 1861, and, according to Gen. Sterling Price's official report of the battle of Wilson's creek, was on Aug. 2 in command as brigadier-general of the advance guard of the army which fought the battle Aug. 10; in that battle Gen. Rains commanded a division. On Sept. 2 he had a smart skirmish with a body of national troops under Col. Montgomery, near Fort Scott, Kansas.

RANDOLPH, George Wythe, secretary of war in the government of the confederate states, born at Edge Hill, King George co., Va., about 1812, is the 12th child of Gov. Thomas Mann Randolph and Martha, the eldest daughter of Thomas Jefferson. At the age of 13, having had 3 years' schooling in Massachusetts, he entered the navy under the auspices of his kinsman, John S. Nicholas, since a commodore, and distinguished himself even at that early age by his coolness, courage, and honesty. He passed a long leave of absence on half pay in studying at the university of Virginia, and after a final cruise as passed midshipman resigned his post in the navy, was graduated at the university, studied law, and established himself in that profession at Charlottesville. Thence he removed to Richmond, and at the outbreak of the civil war in 1861 was in the enjoyment of an extensive practice. He entered the military service against the United States as captain of the Richmond howitzers, served at Yorktown, and rose rapidly through the intermediate grades to the rank of brigadier-general; and when in March, 1862, Mr. Benjamin left the war department, he was appointed to the office and held it until November following, when ill health compelled him to resign it. He married some years since a widow lady of fortune.—His oldest brother, Thomas Jefferson Randolph, edited the Jefferson papers.

RANSOM, Thomas E. Green, brigadier-general of volunteers in the U. S. army, born at Norwich, Vt., Nov. 29, 1834. When 12 years of age he entered the primary class of Norwich university, a military college under the charge of his father, then a major-general of militia of the state of Vermont, afterward appointed colonel of the 9th U. S. infantry, and killed at the battle of Chapultepec. During the Mexican war young Ransom was taught engineering on the Rutland and Burlington railroad. After his father's death he returned to the Norwich university, where he remained until the spring of 1851, when he removed to Peru, Ill. He was successively a civil engineer, a land agent, and agent of the Illinois central railroad in various parts of that state, until the civil war broke out, when he became major of the 11th Illinois volunteers, a regiment enlisted for three months. On its reorganization for 3 years or the war, he was chosen lieutenant-colonel. He commanded the regiment at the siege of Fort Donelson, was promoted to be colonel, and was wounded in the head at the battle of Shiloh. In June, 1862, he was appointed chief of Gen. McClernand's staff and inspector-general of the army of Tennessee; in September was assigned to the command of the district of Cairo, and in the following month was placed in command at Paducah, Ky. On Oct. 10 he was appointed a brigadier-general of volunteers. In November, being still in command at Paducah, he organized a successful expedition against Col. Woodruff's confederate force near Gettysburg.

REAGAN, John H., postmaster-general in the government of the confederate states, born in Sevier co., Tenn., Oct. 8, 1818. He studied law and was admitted to the bar, emigrated to Texas, and settled at Palestine, Anderson co., and was appointed deputy surveyor in that republic in 1840; in 1846 was appointed probate judge, and also became colonel of militia; in 1847 was a member of the legislature; was a judge of the district court of the state from 1852 to 1857, in which year he was chosen, as a democrat, a representative in congress, and was reëlected in 1859. In that body he was a member of the committee on postal affairs, and after his withdrawal from congress, which took place about March 1, 1861, was appointed postmaster-general of the confederate states, whose congress confirmed the appointment, March 6. He was anew appointed to the same office on the inauguration of the regular government of the confederacy in 1862.

REID, Samuel Chester, an American naval officer, born in Norwich, Conn., Aug. 25, 1783, died in New York city, Jan. 28, 1861. He went to sea at the age of 11, and being captured by a French privateer was 6 months a prisoner at Basseterre, island of Guadeloupe. He served as acting midshipman on the U. S. ship Baltimore, in Com. Truxtun's West India squadron, and during the war of 1812 commanded the privateer brig General Armstrong, with which he fought one of the most remarkable naval battles on record at Fayal, Sept. 26 and 27, 1814. The Armstrong carried 7 guns and 90 men. The British fleet consisted of the Plantagenet ship of the line (74), Rota frigate (44), and Carnation brig (18). After a series of terrific encounters, Reid succeeded in thoroughly disabling and defeating the enemy, and scuttled his own vessel to prevent her capture. The British lost 120 killed and 130 wounded; the Americans 2 killed and 7 wounded. The destroyed fleet was part of the expedition concentrating at Jamaica for a descent upon New Orleans. Their crippled condition prevented immediate junction with Admiral Cochrane, so that the expedition did not reach New Orleans until 4 days after Gen. Jackson's arrival. The attack upon the General Armstrong in a neutral port led to a protracted diplomatic correspondence, and President Taylor took measures to force Portugal to assert the inviolability of its neutral port; but his death subsequently threw the case to the arbitration of Louis Napoleon, president of the French republic, who decided against the Americans. After the war Capt. Reid was appointed a sailing master in the navy, and held that office till his death. Meantime he was warden of the port of New York, and invented and erected the signal telegraph at the battery and the narrows communicating with Sandy Hook, and regulated and numbered the pilot boats. He is also distinguished as the designer of the present U. S. flag. (See Standard, vol. xv.)

RENO, Jesse L., major-general of volunteers in the U. S. army, born in Virginia in 1825, killed at the battle of South mountain, Sept. 14, 1862. He was appointed to the U. S. military academy from Pennsylvania, was graduated in 1846, and commissioned brevet 2d lieutenant of ordnance; was brevetted 1st lieutenant for gallantry at Cerro Gordo; commanded a howitzer battery at the storming of Chapultepec, in which engagement he was severely wounded, and brevetted captain. At the close of the war he was appointed assistant professor of mathematics at West Point, where he remained but a few months, and was then made secretary of the board of artillery. He was subsequently connected with the coast survey, and upon withdrawing from that service assisted in the construction of a military road from Big Sioux to St. Paul. He was promoted to be 1st lieutenant of ordnance March 3, 1853. In 1854 he was stationed at the Frankford arsenal at Bridesburg, Penn., where he remained about 3 years, and then accompanied Gen. Johnston to Utah as ordnance officer. He was stationed at the Mount Vernon arsenal in 1859, and afterward at Fort Leavenworth. In July, 1860, he was made captain of ordnance, and in Nov. 1861, brigadier-general of volunteers; commanded the 2d brigade in Burnside's expedition to North Carolina; was distinguished at the battle of Roanoke island for the gallantry with which he led an attack against Fort Bartow; participated in the capture of Newbern and other important military operations; and in July, 1862, was ordered to reënforce Gen. McClellan in the peninsula. About this time he was promoted to be major-general of volunteers, his commission dating from April 26. Subsequently he was sent to Fredericksburg, whence he joined Gen. Pope, then commanding the army of Virginia, and took part in the actions near Manassas at the close of Aug. 1862. At the battle of South mountain his division was in advance, and was engaged during the whole day. Gen. Reno was conspicuous for his gallantry and activity, and the success of the day was greatly owing to his efforts. He was shot while giving orders early in the evening.

REYNOLDS, Alexander W., a general in the service of the confederate states, born in Virginia, was graduated at West Point in 1838 and appointed 2d lieutenant in the 1st infantry;

became 1st lieutenant June 11, 1839, assistant quartermaster Aug. 5, 1847, and captain March 15, 1848, when he relinquished his rank in the line; was dismissed Oct. 8, 1855, and reappointed assistant quartermaster with the rank of captain March 29, 1858, and was attached to the staff of Gen. Twiggs at San Antonio, Texas, to whose surrender to the confederates he was a party. He was accordingly dropped from the rolls of the army by order of the president, Oct. 4, 1861, and is now a brigadier-general in the confederate forces.

REYNOLDS, John Fulton, brigadier-general of volunteers in the U. S. army, born in Pennsylvania, was graduated at West Point in 1841, and appointed 2d lieutenant in the 3d artillery; became 1st lieutenant June 18, 1846; was brevetted captain for gallantry at Monterey, Sept. 23, 1846, and major for gallantry at Buena Vista, Feb. 23, 1847; was aide-de-camp to Gen. Wool in California in 1852; became captain in March, 1855; distinguished himself in conflicts with the Indians near Rogue river, Oregon, in 1856; was made lieutenant-colonel of the 14th infantry, May 14, 1861, and brigadier-general of volunteers, Aug. 20, 1861. He commanded the U. S. forces engaged at Cheat mountain, where the confederate Gen. R. E. Lee was repulsed, and drove back the enemy at Greenbrier, Oct. 3. In 1862 he was attached to the army of the Potomac, served through the campaigns of the Chickahominy and Maryland, and now (Dec. 1862) is in command of the 1st army corps, formerly Hooker's.

RICH MOUNTAIN, a gap in the Laurel Hill range, Va., on the road between Buckhannon and Beverly, about 4 m. from the latter place, where a battle was fought July 12, 1861, between the Union forces under Gen. McClellan and Gen. Rosecrans, and the confederates under Col. Pegram. When Gen. McClellan learned that the confederates, 4,000 strong, were intrenched on the W. side, he ordered Gen. Rosecrans with 4 regiments to place himself in the enemy's rear, the design being to make a simultaneous attack from east and west. The capture of a Union courier with despatches, however, gave the confederates information of the movement, and enabled 2,500 of them to post themselves in the way of Rosecrans's advancing column, meeting him near the summit. A desperate contest ensued, which resulted in the entire rout of the confederates, including a reënforcement which was going up to them from Beverly. A vigorous pursuit was made by Gens. McClellan and Rosecrans, who occupied Beverly the same night. Gen. Garnett, who had a confederate camp near the town, also abandoned that, leaving much of his baggage. The whole number of confederate troops thus defeated and put to flight was estimated at 10,000. The Union loss was 11 killed and 35 wounded; that of the confederates was 150 killed and wounded, while they lost 1,000 prisoners. A large amount of valuable property was also captured.

RICHARDSON, Israel B., major-general of volunteers in the U. S. army, born in Vermont about 1821, died at Sharpsburg, Md., Nov. 3, 1862. He was graduated at West Point in 1841, and appointed 2d lieutenant in the 3d infantry, and 1st lieutenant Sept. 21, 1846; was brevetted captain for gallantry at Contreras and Churubusco, and major for gallantry at Chapultepec; became captain in March, 1851; and resigned Sept. 30, 1855, and settled in Michigan. On the outbreak of the civil war in 1861 he became colonel of the 2d Michigan volunteers, and took a prominent part in the battle of Blackburn's ford, July 18, and the battle of Bull run, July 21, in both of which he commanded a brigade, and at the second of which he covered the retreat, bringing his brigade away in good order the day after the battle. He was now made a brigadier-general with rank from May 17, 1861; commanded a division of Sumner's army corps in the Chickahominy campaign, where he fought with great gallantry; was made a major-general July 4, 1862; covered the retreat of the army after the second battle of Bull run, Aug. 30; fought at South mountain and Antietam, in the second of which he rendered the most important services, and received a wound in the shoulder from the effect of which he died.

RICHMOND, the capital of Madison co., Ky., about 25 m. S. S. E. from Lexington, noted for a battle fought Aug. 30, 1862, between a Union force at first under command of Gen. Manson, and the confederate troops under Gen. E. Kirby Smith. Gen. Manson's command consisted of new levies from Ohio, Indiana, and other western states, and he had orders from his superior, Gen. Nelson, not to risk an action until after the troops should have been further drilled. On Friday, the 29th, however, the confederates having driven in his cavalry pickets, Gen. Manson moved about 1½ m. to southward, throwing a few shells, when the enemy retreated rapidly, leaving one gun. Before daylight Saturday morning Gen. Nelson at some distance received word of the engagement, and ordered a retreat for the purpose of concentrating his forces about Lancaster and Danville. Gen. Manson, notwithstanding this, supposing the enemy's force to be small, advanced about 5 m. to meet them on Saturday morning, having with him 4 regiments and 2 guns; an artillery fight took place, with considerable loss on both sides. The confederates turned the left flank of the Union line, and bore down toward the main column. Gen. Manson then fell back 3 m., forming his line again upon some high hills, with artillery upon either flank. A brisk cannonade was kept up on both sides for 2 hours, when, the confederates advancing under cover of woods, and turning the right flank of Manson's line, he retreated to his original camp ground. Gen. Nelson arrived on the field about 2 P. M., and again rallied the men in line. The artillery ammunition was by this time nearly exhausted, and some of the guns were without men to work them; and Nelson being wounded about 3 o'clock, the troops again fell back, retreating to Lexington. The Union force numbered nearly 9,000; that of the confederates was more than 15,000. The loss of the former in killed and wounded was about 200, while 2,000 were made prisoners, and many were scattered during the retreat. The confederate loss was heavy, but is not exactly known. On Sept. 2, the Union forces having retired toward the Ohio, the confederates occupied Lexington, and threatened a descent upon Covington and Cincinnati, but soon again retired southward.

RICKETTS, James Brewerton, brigadier-general of volunteers in the U. S. army, born in the city of New York. He was appointed from New Jersey to the military academy, was graduated in the same class with Gen. Halleck in 1839, and became 2d lieutenant in the 1st artillery. He was promoted to be 1st lieutenant in 1846, served throughout the Mexican war, participating in the battles of Monterey and Buena Vista, was appointed regimental quartermaster in 1849, and became captain in 1851. He was ordered to the Rio Grande in 1854, and was engaged against the Mexican bandit Cortinas in Nov. 1859. In April, 1860, he was ordered to the artillery school of practice at Fortress Monroe, and from that post was removed to the command of the first battery of rifled guns, in the beginning of the civil war. He distinguished himself in the first battle of Bull run, where he was seriously wounded in the leg and taken prisoner, and was confined at Richmond for 8 months. On his exchange he was made brigadier-general of volunteers, his commission dating from the battle of Bull run, and was placed in command of the 2d division of the 3d army corps (McDowell's) in the army of Virginia. He was wounded at the second battle of Bull run. At the battle of Antietam he was attached to Gen. Hooker's corps, which he led after that general was wounded. The command of the corps was afterward assigned to Maj. Gen. Reynolds.

RIPLEY, James W., brigadier-general in the U. S. army, born in Connecticut in 1797, became a cadet at West Point in 1813, 2d lieutenant of artillery May 31, 1814, and 1st lieutenant April 20, 1818; was battalion quartermaster from 1817 to 1821; was retained as 1st lieutenant of artillery on the reorganization of the army, June 1, 1821; became captain Aug. 1, 1825, captain of ordnance May 30, 1832, major July 7, 1838, superintendent of the Springfield armory in 1841, and a member of the ordnance board June 29, 1847; was brevetted lieutenant-colonel for meritorious conduct during the war with Mexico, May 30, 1848; was commissioned lieutenant-colonel Dec. 31, 1854, and brigadier-general Aug. 3, 1861, when he became head of the ordnance department, which office he still retains. He was in Europe on leave of absence when the civil war broke out in 1861, but at once returned home to offer his services to the U. S. government.

RIPLEY, Roswell Sabin, a general in the service of the confederate states, born in Ohio about 1825, was graduated at West Point in 1843, and appointed brevet 2d lieutenant in the 3d artillery; became 2d lieutenant in the 2d artillery March 26, 1846, and 1st lieutenant March 3, 1847; was aide-de-camp to Gen. Pillow in 1847-'8; was brevetted captain for gallantry at Cerro Gordo, and major for gallantry at Chapultepec; and resigned March 2, 1853, and took up his residence at Charleston, S. C., where he had married. Previous to the outbreak of the civil war in 1861, he had actively enlisted in the military service of South Carolina; he took a prominent part in the siege of Fort Sumter, is now a brigadier-general in the confederate army, and was wounded at the battle of Antietam. He has published "The War with Mexico" (2 vols., New York, 1849).

RIVES, William C., an American statesman, born in Nelson co., Va., May 14, 1793. He was educated at Hampden Sidney and William and Mary colleges, and studied law under the direction of Thomas Jefferson. In 1814-'15 he served as aide-de-camp in the militia and volunteer force called out for the defence of Virginia; in 1816 was a member of the convention for revising the state constitution; and from 1817 to 1819 was a member of the state legislature from Nelson county, and in 1822 from Albemarle county. In 1823 he was elected a representative in congress, and was reelected in 1825 and 1827. At the close of his last term in 1829 he was appointed by President Jackson minister to France, where he remained till 1832, when he was elected a U. S. senator. He resigned that office in 1834, but was reelected in 1835 and again in 1840, serving till March 4, 1845. He was again minister to France from 1849 to 1853, after which he lived in retirement till 1861, when he became a member of the peace conference which met at Washington in February. Before the inauguration of Mr. Lincoln as president, Mr. Rives, with ex-Gov. Morehead and Mr. Guthrie of Kentucky, Gen. Doniphan of Missouri, and others, by special invitation, had an interview with him to consult upon the means of averting civil war, a history of which has been given by Mr. Morehead in a speech at Liverpool, Oct. 9, 1862. After the secession of Virginia Mr. Rives became a member of the confederate provisional congress at Montgomery, Ala., but does not appear at present (Dec. 1862) to hold any official position. He has published "Life and Times of James Madison" (vol. i., Boston, 1859).

ROANOKE ISLAND, an island on the coast of North Carolina, forming part of Tyrrell co., between Pamlico and Albemarle sounds, Croatan sound lying between the island and the mainland. This island was occupied and fortified by the confederates, under command of Gen. Henry A. Wise, who at the time of the attack, Feb. 7, 1862, was sick at Nag's Head, the command devolving upon Col. Shaw. On Jan. 11 and 12 the combined military and naval forces under the command of Gen. Burnside and Flag Officer Goldsborough, known as the Burnside expedition, and comprising a great number of gunboats and transports, sailed from Hampton roads. From the time of sailing the squadron was detained by storms and adverse winds, so that it was a week before all had reached Hatteras inlet. During the severe weather which continued for nearly two weeks, the steamer City of New York with a valuable cargo, the steamer Pocahontas with a freight of horses for the Rhode Island battery, a gunboat, and a floating battery, were sunk; other damage was done to the fleet, the water vessels for the squadron were delayed, and the troops endured much suffering. The storm being over, the squadron left Hatteras inlet on Feb. 5 for Roanoke island; it numbered 65 vessels, about 50 vessels of the expedition remaining behind at the inlet. That night the fleet anchored at a point 10 m. S. of Roanoke island, and on the 6th set sail again, though going but a short distance; on the 7th, passing successfully through the narrow entrance to Croatan sound, known as Roanoke inlet, Flag Officer Goldsborough prepared to commence the attack. The important confederate forts on Roanoke island were three in number. Fort Huger, near the northern extremity, mounted 10 32-pounders; Fort Blanchard, S. of this, mounted 4 guns of equal weight; Fort Bartow, still further S., mounted 9 guns, including one 80-pounder rifle. All these works were N. of the middle of the island, and all were abandoned without being attacked. Under the protection of the confederate batteries were 7 of their gunboats, and the engagement opened with an attack upon them at 11½ A. M. on the 7th; the firing was kept up with considerable spirit for some time, the confederate gunboats all the while retiring up a narrow channel covered by their forts, their purpose being to draw the Union fleet into a portion of the sound which they had dangerously obstructed by sinking piles. This plan was however unsuccessful, the trap having been exposed, and when the retreating gunboats had passed out of reach of his guns, Flag Officer Goldsborough turned his attention to a battery S. of the forts named; the fire from this was delivered very feebly, and the only immediate result of the action was the burning of the barracks and other buildings connected with the confederate post. In the afternoon, at 5 o'clock, about 10,000 Union troops were landed at a point near the middle of the island, being protected by their gunboats, which drove off the confederate fleet. No advance was made that night, but on the morning of the 8th the land attack was commenced. The plan of the action placed Gen. Foster at the head of a central column, Gen. Reno in command of a left flanking column, and Gen. Parke of a right flank column to attack the confederate left; the centre column had with it a marine battery of 6 12-pounders. The most formidable confederate work consisted of a battery erected across the only road of advance up the island, the ground on either side of the road being swampy and rendered almost impenetrable by a dense undergrowth; the woods in front of the battery had been cut down for some distance, leaving an open space of 300 yards in depth by 200 feet in width; directly in front of the work was a wide and deep ditch, filled with water, and for a considerable distance around the fallen timber seriously obstructed the way. The defending force consisted of 300 men in the battery, and about 3,000 as a reserve. The central column moved up the road, and began the attack by skirmishing till they came within range of the works, when the marine battery opened with spirit, suffering severely from the confederates' response; the ammunition becoming exhausted, this battery was forced to retire. A fierce fight then ensued between the Union troops of this column and a portion of the Wise legion, during which the Virginians were repulsed, with the loss of Col. O. Jennings Wise, the confederate battery meanwhile keeping up a severe fire. The movement of the Union flanking columns had not been observed by the confederates, they relying upon the supposed impenetrability of the woods; their left and right flanks were almost simultaneously attacked by these columns, and they fled without a struggle, even casting off their garments in their rapid retreat. Two Union regiments pursued the confederates to a point on the E. side of the island, where a few boat loads attempted to embark for a place of safety; 25 or 30 prisoners were here taken. Another Union regiment moved toward a confederate camp situated to the northward of the battery, and caused the surrender of a Carolina regiment. A third body of Union troops advanced up the island to a second confederate camp, and were met by an offer of surrender, by which 3,000 prisoners were taken. All the forts and batteries on the island were then abandoned by the confederates, and with them a fort on the mainland mounting 8 guns. The Union loss in this battle was about 45 killed and 200 wounded; among the former were Col. Russell of the 10th Connecticut, and Lieut. Col. Victor de Monteuil of the 53d New York.

ROBERTS, Benjamin Stone, brigadier-general of volunteers in the U. S. army, born in Manchester, Vt., in 1811. He was graduated at West Point in 1835, appointed brevet 2d lieutenant in the 1st dragoons, made assistant commissary of subsistence in 1836, and promoted to be 1st lieutenant in 1837. He resigned his commission in Jan. 1839, and shortly afterward became principal engineer on the Champlain and Ogdensburg railroad, and in 1841 assistant geologist of the state of New York. In 1842 he visited Russia as an assistant engineer to Lieut. G. W. Whistler, who had been charged with the construction of railroads in that empire. Having returned to the United States, he was admitted to the bar, and in 1843 established himself as a lawyer in Iowa. In 1846 he reëntered the army as 1st lieutenant in the mounted rifles, became captain in 1847, and was brevetted major for gallantry at Chapultepec, where he commanded an advance party of stormers. After the capture of the city of Mexico he served under Gen. Lane against the guerillas, and was brevetted lieutenant-colonel for his conduct in action with the enemy at Matamoras and the pass of Gualajara. During the following years he was for a long time on bureau duty in Washington, his health unfitting him for active service. When the civil war broke out he was with his regiment in New Mexico, and was assigned by Col. Canby to the command of the southern district. He defended Fort Craig against the Texan forces under Sibley, and on June 1, 1862, was ordered to Washington, with the trophies and reports of the campaign. On July 16 he was appointed brigadier-general of volunteers, and assigned to duty with Gen. Pope's army of Virginia, as chief of cavalry, and afterward as inspector-general.

ROBIN, Charles Philippe, a French physician and microscopist, born at Jafferon, department of Ain, June 4, 1821. He was educated at Paris, and was sent in 1845 by Orfila to the shores of Normandy and the isle of Jersey to collect specimens for his museum connected with the school of practical medicine. He afterward devoted his attention especially to microscopic investigations in anatomy and pathology, and may be considered as the leader if not the founder of the school of microscopic medicine. He has taken prominent rank also as a lecturer and writer on general anatomy, of which he was made professor in 1847. Among his publications, beside several memoirs read before the institute of France and the biological society, mostly on the microscopic anatomy of the brain, medullary canal, and tissues, are the following: *Du microscope et des injections dans leur application à l'anatomie et à la pathologie* (8vo., 1849); *Tableaux d'anatomie, contenant l'exposé de toutes les parties à étudier dans l'organisme de l'homme et dans celui des animaux* (4to., 1851); *Traité de chimie anatomique et physiologique, normale ou pathologique, ou des principes immédiats normaux ou morbides qui constituent le corps de l'homme et des mammifères* (3 vols. 4to., with an atlas of 45 plates), in conjunction with M. Verdeil; and *Histoire naturelle des végétaux parasites qui croissent sur l'homme et les animaux vivants* (8vo., 1853, with an atlas of 15 plates). He prepared with M. Lettré the 10th and 11th editions of the *Dictionnaire de médecine* of P. H. Nysten (1855 and 1858).

ROBINSON, John Cleveland, brigadier-general of volunteers in the U. S. army, born in Binghamton, N. Y., April 10, 1817. He entered the military academy in 1835 and remained there till 1838, when he began the study of law, but obtained in 1839 a commission as 2d lieutenant in the 5th infantry. He was ordered to the Rio Grande in 1845, and was promoted to be 1st lieutenant during the Mexican war, in which he was distinguished at the battle of Monterey. At the close of that war he served with his regiment in Arkansas and Texas, was made captain in 1850, and was afterward sent against the Indians in Florida. In 1857 he accompanied the army to Utah, and was placed in command of Fort Bridger. At the beginning of the civil war he commanded at Fort McHenry, Baltimore. When relieved from this duty he was sent to the West as mustering officer, and remained as such until appointed colonel of the 1st regiment Michigan volunteers. He was promoted to be major of the 2d infantry in Feb. 1862, was made brigadier-general of volunteers in the following April, and took command of a brigade at Newport News in May, but was soon ordered to the army of the Potomac and placed in command of the 1st brigade of Kearny's division in the corps of Gen. Heintzelman. He was distinguished during the seven days' battles before Richmond, particularly those fought on June 30 and July 1, 1862.

RODMAN, Isaac Peace, brigadier-general of volunteers in the U. S. army, born at South Kingstown, R. I., Aug. 28, 1822, died Sept. 29, 1862, in consequence of wounds received at the battle of Antietam. He was educated for mercantile pursuits, engaged in business as a manufacturer, was for several years colonel of a militia regiment, and when the civil war broke out in 1861 was a member of the state senate of Rhode Island. He resigned his seat to raise a company of volunteers, and as captain in the 2d Rhode Island regiment participated in the battle of Bull run. He soon afterward became lieutenant-colonel and then colonel of the 4th Rhode Island volunteers, whom he commanded at the taking of Roanoke island, his regiment being attached to the command of Gen. Parke. For his gallantry at the battle of Newbern (March 14, 1862), where he led a decisive charge and took the enemy's works at the point of the bayonet, he was appointed brigadier-general, April 28, 1862. In the battle of Antietam, while leading his brigade to a charge upon the enemy's guns, he was mortally wounded by a cannon ball.

ROSECRANS, William Starke, major-general of volunteers in the U. S. army, born at Kingston, Delaware co., O., Nov. 6, 1819. He was graduated at West Point in 1842, being the 5th in rank in his class, and appointed a 2d lieutenant of engineers; served one year at Fortress Monroe; became assistant professor of engineering at West Point in 1843; took charge of the fortifications at Newport, R. I., in 1847; in 1852 was ordered to survey New Bedford and Providence harbors and Taunton river; in 1853 became constructing engineer at the Washington navy yard; and in April, 1854, resigned his commission. He then opened an office in Cincinnati as a consulting engineer and architect, in 1855 took charge of the works of the cannel coal company in western Virginia, and afterward became connected with the Cincinnati coal oil company. On the breaking out of the civil war in 1861 he became attached to the staff of Gen. McClellan in Ohio, was appointed on June 10 colonel of the 23d Ohio volunteers, and on June 16 was commissioned a brigadier-general in the regular army, and ordered to duty under Gen. McClellan in western Virginia. He won the battle of Rich mountain, July 20, and on July 24 succeeded McClellan as commander of that department, which he retained until superseded by Gen. Fremont in March, 1862. In June he succeeded Gen. Pope in command of an army corps in the army of the Mississippi, under Gen. Grant. In September, when the commands were reorganized, Gen. Grant's department was called the district of West Tennessee, and Gen. Rosecrans was placed in charge of the army of the Mississippi, composing the 3d division of Grant's district, his head-quarters being at Corinth. Here, on Oct. 3 and 4, he received the attack of the confederates under Van Dorn and Price, and after a bloody and desperate contest signally defeated them. On Oct. 30 he superseded Gen. Buell in command of the department of the Ohio, and he was soon afterward assigned to the command of the department of the Cumberland, comprising the state of Tennessee south of the Cumberland and east of the Tennessee river, and such parts of northern Alabama as may be occupied by the federal forces; his troops constitute the 14th army corps.

ROSS, Leonard Fulton, brigadier-general of volunteers in the U. S. army, born in Fulton co., Ill., was admitted to the bar in 1845, and the next year enlisted as a private in the 4th Illinois volunteers, and served through the Mexican war, rising to be 1st lieutenant. After the war he resumed the practice of his profession, and was probate judge for 6 years. In May, 1861, he was chosen colonel of the 17th Illinois volunteers, with which he served in Missouri and Kentucky. The next winter he was in command at Cape Girardeau, Mo. He was commissioned brigadier-general of volunteers April 25, 1862, having been previously in command of a brigade since the capture of Fort Donelson. After the evacuation of Corinth he was promoted to the command of a division, and stationed at Bolivar, Tenn.

ROUSSEAU, Lovell Harrison, major-general of volunteers in the U. S. army, born in Lincoln co., Ky., in 1820. He is of Huguenot descent, and his father was first cousin to President Harrison. He never went to school after he was 10 years old. When he was 13 his father died, leaving a widow and a large family of young children. Lovell obtained employment in macadamizing a turnpike road, and while he sat at his work breaking stone, used to study French from a paper spread out before him. After a while he removed to the vicinity of Louisville, studied law for a few months there, and for a few months more at Bloomfield, Ind., was admitted to the bar in the latter place in 1841, and in 1844–'5 was a member of the Indiana legislature. In 1846 he became captain in the 2d Indiana volunteers for the Mexican war, and immediately after his return home was elected to the state senate. He removed to Louisville, Ky., in 1849, before his term of office had expired, but his constituents would not allow him to resign. In 1860 he was elected to the Kentucky senate. When the civil war broke out he raised two regiments of Kentuckians, but, in deference to the neutral sentiment prevailing in that state, was obliged to encamp on the Indiana side of the Ohio river. When Buckner advanced toward Louisville in Sept. 1861, he crossed the river to protect that city. He was appointed brigadier-general of volunteers Oct. 1, and attached to Gen. Buell's army of the Ohio, with which he participated in the battle of Shiloh. He was afterward promoted to the command of a division in Gen. McCook's corps, at the head of which he took a principal share in the battle of Perryville, Oct. 8, 1862. In the same month he was nominated a major-general.

RUBIDIUM (Lat. *rubidus*, dark red), an alkaline metal, the existence of which was first suspected by Kirchhoff and Bunsen, subsequently to the discovery of cæsium (see Cæsium in this supplement), and through a similar circumstance, namely, the detection (in the spectrum obtained by examination of an impure compound of cæsium) of certain bright lines not previously observed in the light from any then known elements. (See Spectrum Analysis in this supplement.) The lines characteristic of the new metal are two remarkable bands of dark red lying beyond Fraunhofer's A (see Optics), and consequently in a part of the spectrum visible only by unusual methods. A precipitate of potassium and associated alkaline metals being obtained from specimens of lepidolite by action of bichloride of platinum, by subsequent reduction of the precipitate with hydrogen and extracting with water the chloride of the new metal is separated; and this is then purified by repeated precipitation and boiling, alternately. To free it from cæsium, the chloride is converted into a carbonate, and repeatedly extracted with alcohol. With mercury, by aid of a voltaic circuit, the rubidium is then obtained in the condition of an amalgam, which is of silver-white color and crystalline structure. Rubidium is thus far found in greatest quantity in lepidolites, from which its compounds are most easily obtained pure. A lepidolite from Rozena in Moravia gave .002 of the entire weight of oxide of rubidium; the Saxon lepidolite was still richer; and traces of the metal were determined in almost all the mineral waters examined, though not always in the potash compounds of commerce. Very recently, Bunsen has found a lepidolite yielding .03 of rubidium. The equivalent of rubidium is 85.36; its symbol Rb. As in case of cæsium, its amalgam quickly oxidizes in the air, and decomposes cold water. Though standing in the scale below cæsium, rubidium is electro-positive to potassium. Its hydrate is highly soluble, caustic, dissolving in water with strong evolution of heat, and greedily attracting water and carbonic acid from the air. Its carbonate forms indistinct, strongly alkaline crystals; its bicarbonate, prismatic crystals, permanent in the air, with a faint alkaline reaction, and cooling rather than caustic taste. Its sulphate and nitrate have been obtained, and it has also its peculiar alum, crystallizing in hard glassy octahedrons. Its chloride crystallizes with difficulty in cubes, permanent in the air, and easily fusible.—Mr. E. W. Blake, jr., of New Haven, reports (1862) the finding of both rubidium and cæsium, along with lithium, potassium, and sodium, in the residues from the preparation of lithia from triphyline, the iron and phosphoric acid of the residues being first removed, and the remaining sulphates of the alkalies converted into chlorides. Both the former metals he first detected by means of the spectra afforded on optical examination of the residues named. While a quantitative analysis showed in 100 parts of the entire mass of chlorides the presence of 50.04 of chloride of sodium, 40.98 of that of lithium, and 9.29 of that of potassium, that of rubidium formed but 0.18, and of cæsium but 0.11 parts of 1 per cent. Prof. C. D. Allen ("American Journal of Science," Dec. 1862) details a new process for the separation of cæsium and rubidium, in the form of bitartrates. He found the lepidolite of Hebron, Me., unusually rich in these elements, though their relative quantities were the reverse of those in the lepidolites examined by Bunsen, the cæsium being here the most abundant. In the first process of extraction, he obtained 0.3 per cent. of cæsium, and 0.14 of rubidium; and he subsequently recovered an additional quantity of the metals from the washings of the first process. One part of bitartrate of cæsium requires for solution 1.02 parts of boiling water; 1 part of the like salt of rubidium, 8.5 parts. Grandeau has recently detected rubidium in the ashes of the beet, in tobacco, coffee, tea, and raw tartar; and he believes it to be a widely distributed metal, not necessarily associated with lithium.—Two points of especial interest connected with the discovery and relations of the new metals are, that instead of the long familiar number of two fixed alkalies, we are henceforth obliged to admit at least five such substances, viz., cæsia, rubidia, potassa, soda, and lithia; and that, singularly, these alkalies, and especially the first three just named, show a remarkable tendency to appear in the same minerals or other situations, and also a sort of affinity or at least similarity of behavior that renders their separation difficult.

RUGGLES, Daniel, a general in the service of the confederate states, born in Massachusetts about 1814, was graduated at West Point in 1833 and appointed a brevet 2d lieutenant in the 5th infantry; became 2d lieutenant Feb. 18, 1836, 1st lieutenant July 7, 1838, and captain June 18, 1846; was brevetted major for gallantry at Contreras and Churubusco, Aug. 20, and lieutenant-colonel for gallantry at Chapultepec, Sept. 13, 1847; and resigned his commission May 7, 1861. He was at once appointed a brigadier-general in the provisional confederate army, served in New Orleans in the winter of 1861–'2, and retreated thence with the forces under Gen. M. Lovell, previous to the surrender of the city to Flag Officer Farragut.

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SADLIER, Mary Anne (Madden), an American authoress, born in Cootehill, county Cavan, Ireland, Dec. 31, 1820. When scarcely 18 she began to contribute to "La Belle Assemblée," a magazine published in London under the patronage of the late duchess of Kent. After the death of her parents she emigrated to America with a young brother, and settled in Montreal, where she published by subscription a collection of traditionary stories, entitled "Tales of the Olden Time." In 1846 she became the wife of Mr. James Sadlier, one of the firm of D. and J. Sadlier and co., Catholic publishers of New York and Montreal, and now (1862) resides in the former city. She has written a great number of Catholic tales, and has also been a contributor to several of the leading Catholic papers of America.

SALOMON, Frederic, brigadier-general of volunteers in the U. S. army, born near Halberstadt, Prussia, April 7, 1826. He received his early education at the gymnasium in Halberstadt, and was appointed a government surveyor. He served as a "one year's volunteer" under the Prussian military system, at Magdeburg, in the artillery, and was promoted to a lieutenancy in that service after passing the necessary examination. In 1848 he went to Berlin, and became a pupil in the royal academy of architecture. He soon after emigrated to the United States with his brother William, now (1862) governor of Wisconsin, and settled at Manitowoc, Wis., where he pursued for a time his business of surveying, was register of deeds 4 years, and was employed as chief engineer on the Manitowoc and Mississippi railroad until 1859. In the spring of 1861 he was elected captain in the 5th regiment Missouri volunteers, served in that capacity during their term of three months under Gen. Sigel, and was present at the battle of Wilson's creek. Before his first term of service had expired he was made colonel of the 9th Wisconsin volunteers, which he commanded until he was appointed brigadier-general, July 16, 1862, and assigned to a brigade in Kansas.

SALOMON, Haym, an American financier, born of Hebrew parentage at Lissa, then in Poland, about 1740, died in Philadelphia in 1785. Emigrating to America some years before the revolution, he established himself in Philadelphia as a merchant and banker, and accumulated a large fortune, which during the war of independence he devoted to the use of the American government. He negotiated all the war subsidies obtained from France and Holland, which he indorsed and sold in bills to American merchants at a credit of two and three months on his personal security, receiving for his commission one quarter of one per cent. He acted as paymaster-general of the French forces in America, and for some time supported the ministers or agents of several foreign powers when their own sources of supply were cut off. It is asserted that over $100,000 thus advanced has never been paid. Mr. Salomon also lent to the U. S. government about $600,000 in specie, and at the time of his death the sum of $400,000 remained due to him from the government, irrespective of amounts which he had lent to statesmen and others while engaged in fulfilling public trusts. His descendants have petitioned for remuneration, and their claims have several times been favorably reported upon by committees of congress.

SAVAGE'S STATION. See Chickahominy.

SAXTON, Rufus, brigadier-general of volunteers in the U. S. army, born in Deerfield, Mass., Oct. 19, 1824. He was engaged in agricultural labors until he was 20 years of age, was graduated at West Point in 1849 and entered the 3d artillery, was transferred to the 4th artillery in 1850, and became 1st lieutenant in 1855. In the same year he led a surveying party across the Rocky mountains from the mouth of the Columbia river, by way of the North pass, to Fort Benton on the Missouri, and thence by way of that river to St. Louis. After his return from this expedition he was employed for some years on the coast survey, and effected certain improvements in instruments for taking deep sea soundings, one of which, a self-registering thermometer, bears his name. (See Atlantic Ocean, vol. ii. p. 304.) In 1860 he became an instructor at West Point. At the breaking out of the civil war he was at St. Louis, under Capt. (afterward Gen.) Lyon, acting as quartermaster, with the rank of captain, and bore a conspicuous part in breaking up the confederate "Camp Jackson." He subsequently joined McClellan in western Virginia, and accompanied him to Washington. He went with Gen. Sherman to Port Royal in the capacity of quartermaster, and on April 15, 1862, was appointed brigadier-general of volunteers. For a short time after the retreat of Gen. Banks from the valley of the Shenandoah, Gen. Saxton was in command at Harper's Ferry. Soon after this he went back to Port Royal, where he is now (Dec. 1862) acting as military governor.

SCAMMON, Eliakim Parker, brigadier-general of volunteers in the U. S. army, born in Maine, was graduated at West Point in 1837 and appointed 2d lieutenant in the 4th artillery; was acting assistant professor of mathematics at West Point from Aug. 28, 1837, to Sept. 10, 1838, and assistant professor of ethics from Aug. 30, 1841, to July 13, 1846; was transferred to the topographical engineers July 7, 1838, and became 1st lieutenant Sept. 21, 1846; was acting aide-de-camp to Gen. Scott in his Mexican campaign; became captain in March, 1853; and was dismissed June 4, 1856. In 1861 he reëntered the service, became colonel of the 43d Ohio volunteers, and in Oct. 1862, was promoted to be brigadier-general for gallantry in the battle of South mountain.

SCHENCK, Robert Cumming, major-general of volunteers in the U. S. army, born in Ohio, Oct. 7, 1809. He was educated at the Miami university, studied law, and was admitted to the bar. He did not continue long in the practice of his profession, but soon entered political life, was elected to the legislature of his state, and then sent to congress as a whig during 4 consecutive terms (1843-'51), and was distinguished for ability and industry. In 1851 he was appointed U. S. minister to Brazil, where he remained for 3 years. At the beginning of the civil war in 1861 he was made brigadier-general of volunteers, and placed in command of a brigade stationed near Washington. On June 17, while attempting to carry out an order to take possession of the railroad from Alexandria to Vienna, Va., the train in which he was transporting his men was fired into and disabled by a concealed battery, and severe loss was inflicted upon the national soldiers before they could retreat. At the first battle of Bull run Gen. Schenck commanded a brigade under Gen. Tyler; he was in the rear during the retreat, and brought off his men in comparatively good order. He afterward served under Gens. Rosecrans and Fremont, in western Virginia, and under Sigel; was wounded at Bull run, Aug. 30, 1862, and had an arm amputated at the wrist on the battle field. In October he was nominated a major-general, and was again elected to congress as a republican, defeating C. L. Vallandigham, his democratic opponent. He was appointed to command at Baltimore, Dec. 16, 1862.

SCHOEPF, Albin Francisco, brigadier-general of volunteers in the U. S. army, born in Hungary, March 1, 1822. He entered the military academy in Vienna in 1837, became a 2d lieutenant of artillery in 1841, and served in the Austrian army until the outbreak of the revolution in Hungary in 1848. He then enlisted in the Hungarian army as a private, but was soon made captain, and afterward major. After the defeat of his countrymen in 1849, he escaped into Turkey, served under Gen. Bem at Aleppo, and was made instructor of artillery. In 1851 he came to the United States, and in the same year received an appointment in the U. S. coast survey. In 1858 he was transferred to the patent office as an assistant examiner. He was made brigadier-general of volunteers, Sept. 28, 1861, and immediately ordered to Kentucky, where on Oct. 21 he defeated Gen.

Zollicoffer at Camp Wild Cat. At the battle of Perryville, Oct. 8, 1862, he commanded a division in Gen. Gilbert's corps.

SCHOFIELD, John McAllister, brigadier-general of volunteers in the U. S. army, born in Chautauqua co., N. Y., Sept. 29, 1831. At 12 years of age he removed with his father's family to Illinois. He was graduated at West Point in 1853, brevetted 2d lieutenant in the 2d artillery, and stationed for two years at Fort Moultrie, S. C., and Fort Cassin, Florida. He was then ordered to West Point as instructor in natural philosophy, and remained there for 5 years, when he was granted a leave of absence to occupy the chair of natural philosophy in Washington university, St. Louis, Mo., which place he was filling when the civil war broke out. By an order from the war department he was detailed to muster into service the Missouri troops, and was appointed major of the 1st Missouri infantry. His rank in the regular army was then 1st lieutenant, and in May, 1861, he was appointed captain. After the battle of Booneville he joined Gen. Lyon as assistant adjutant-general and chief of staff, and was with him when he fell at the battle of Wilson's creek. He was commissioned brigadier-general of volunteers Nov. 21, 1861, and assigned to the command of the militia of Missouri authorized by the war department to be raised for service during the war. When Gen. Halleck went to Pittsburg Landing, about four fifths of the state was placed under command of Gen. Schofield, and on June 1, 1862, the district of Missouri, comprising the entire state, was assigned to him. In October he received command of the army of the frontier, comprising the troops of Missouri and Kansas, with which he drove all the organized forces of the rebels back to the valley of the Arkansas, defeating Hindman, Oct. 22, at Maysville near Pea ridge, Ark., and pursuing him beyond the Boston mountains.

SCHURZ, Carl, an American orator and brigadier-general of volunteers, born at Liblar, near Cologne, Germany, March 2, 1829. He passed through the full course of studies at the gymnasium of Cologne, and in 1846 went to the university of Bonn, where he studied history, philosophy, and ancient languages. On the outbreak of the revolution of 1848 he took an active interest in the prevailing agitation, and having become acquainted with Gottfried Kinkel, then professor of rhetoric at the university, he joined him in the publication of a liberal newspaper, which was conducted wholly by Schurz while Kinkel was absent as a member of the Prussian legislature. In the spring of 1849, having made an unsuccessful attempt to produce an insurrection at Bonn, both Kinkel and Schurz were obliged to flee, and betook themselves to the Palatinate, where a body of revolutionary troops was already organized. Schurz entered the military service as adjutant, and participated in the defence of Rastadt. On the surrender of that fortress he concealed himself for 3 days and nights without food, and finally, escaping through a sewer, made his way across the Rhine, arriving in Switzerland at the beginning of Aug. 1849, where he remained in seclusion at Zürich till the following May. Kinkel in the mean time had been captured, condemned to 20 years' imprisonment, and shut up in the fortress of Spandau. After long correspondence with his wife, Schurz determined to undertake his rescue, and for this purpose made his way secretly back to Germany in May, 1850, spending much time in preparations in Cologne and Berlin, and remaining in the latter city for 3 months engaged in endeavors to establish relations with the guards who watched the prisoner. The rescue was finally accomplished in the night of Nov. 6, 1850, Kinkel's cell being broken open and he brought upon the roof of the prison, whence he was successfully lowered to the ground. From the boldness of the scheme it was alleged, without reason, that the government must have winked at it. The fugitives escaped the same night across the frontier into Mecklenburg, and thence made their way to Rostock, and, after remaining some time in concealment, took passage in a small schooner for Leith, where they arrived about Dec. 1. Schurz then went to Paris, where he remained as a correspondent of German journals till June, 1851, when he went to London and lived as a teacher till July, 1852. He then married and removed to America. He remained 3 years in Philadelphia engaged in legal, historical, and political studies, made a short visit to Europe, and then settled at Madison, Wis. In the presidential canvass of 1856 he became known as an orator in the German language. In 1857 he was nominated by the republican state convention as a candidate for the office of lieutenant-governor of the state, but was not elected. In 1858, on occasion of the contest between Mr. Douglas and Mr. Lincoln for the U. S. senatorship of Illinois, he delivered his first English speech, which was widely republished by the journals in various parts of the country. In the spring of 1859 he was invited to the celebration of Jefferson's anniversary in Boston, and delivered a speech on Americanism in Faneuil hall. He had now removed to Milwaukee and established himself in the practice of the law. In the winter of 1859-'60 he was extensively engaged as a lyceum lecturer in New England; when in Springfield, Mass., he delivered a speech against the ideas and policy of Mr. Douglas, which excited much attention. As a member of the republican national convention of 1860, he exercised a good deal of influence, especially in determining that portion of the platform which related to citizens of foreign origin. During the canvass which followed he was constantly occupied in addressing the people throughout the northern states, both in English and German, his principal speeches being one on "The Irrepressible Conflict," delivered in St. Louis, and one entitled "The Bill of Indictment against Douglas," delivered in New York. After Mr. Lincoln's inauguration Schurz was appointed minister to Spain, but on the outbreak of the civil war desired to be relieved from that office in order that he might enter the army. The arrangements for this change were nearly consummated, when he was required to go to Madrid, where he remained as minister till Dec. 1861, and then returned to the United States. A speech delivered in New York after his return, on March 6, 1862, on the necessity of abolishing slavery in order to restore the national unity, has been regarded by many as the ablest of his public discourses. He resigned his office as a minister, was appointed a brigadier-general of volunteers, and on June 17 took command of a division in the corps of Gen. Sigel, with which he distinguished himself at the second battle of Bull run.

SCHWEINITZ, Lewis David von, an American botanist and clergyman of the Moravian church, born in Bethlehem, Penn., Feb. 13, 1780, died there, Feb. 8, 1834. At the age of 18 he visited Germany, where he completed his education and remained until 1812. He then returned to America, and filled an ecclesiastical office at Salem, N. C. In 1821 he was appointed to a similar office at Bethlehem, and continued in the same until his death. He added nearly 1,400 new species to the stores of botanical science; and of these more than 1,200 were of North American fungi, previously little studied. He was a member of several learned associations in America, Germany, and France; and the university of Kiel, in Denmark, conferred upon him the honorary degree of doctor in philosophy. A new plant was named after him by Dr. Elliot the *Schweinitzia.* His herbarium, which at the period of his death was one of the largest private collections of the kind in America, he bequeathed to the academy of natural sciences at Philadelphia, where it now is. His principal works are: *Conspectus Fungorum Lusatiæ* and *Synopsis Fungorum Carolinæ Superioris*, both published at Leipsic, and the latter edited by Dr. Schwegrichen; *Specimen Floræ Americæ Septentrionalis Cryptogamicæ* (Raleigh, 1821); "Monograph of the Linnæan Genus Viola" (1821); "Catalogue of Plants collected in the N. W. Territory by Say" (1824); "Monograph upon the American Species of the Genus Carex" (1824); and *Synopsis Fungorum in America Boreali Media Degentium* (1831).

SEDDON, James A., secretary of war in the government of the confederate states, born in Virginia, adopted the profession of the law, and was a representative in congress from the Richmond district from 1845 to 1847, and from 1849 to 1851. Always a democrat, he was chosen a member of the peace conference which met at Washington Feb. 4, 1861, represented Virginia in the committee appointed by that body to consider means for the settlement of the existing difficulties, and in the conference voted against the proposition to reëstablish the Missouri compromise line, as well as against that to prohibit the reopening of the African slave trade. He was elected by the state convention a delegate at large from Virginia to the confederate congress, July 20, 1861, in which he served until the election of a congress under the permanent constitution of the confederate states. He was appointed secretary of war on the resignation of Mr. G. W. Randolph, Nov. 18, 1862. His residence is in Goochland co.

SEDGWICK, John, major-general of volunteers in the U. S. army, born in Connecticut, was graduated at West Point in 1837, and appointed 2d lieutenant in the 2d artillery. He was promoted to be 1st lieutenant in 1839, and brevetted captain for gallantry at Contreras and Churubusco, where he had command of his company. He was highly distinguished for his conduct in the battles of Molino del Rey and Chapultepec and the attack on the San Cosme gate, where he was again in command of his company, and for his gallantry in the second of these engagements was brevetted major. He was commissioned captain in 1849, and in March, 1855, was promoted to be major in the 1st cavalry. On April 25, 1861, he was appointed colonel of the 4th cavalry, and on Aug. 31 brigadier-general of volunteers. He was assigned Gen. Stone's command on the upper Potomac when that officer was arrested in Feb. 1862, and during the Chickahominy campaign he led a division in Gen. Sumner's (the 2d) army corps. He was commissioned a major-general of volunteers July 4, 1862. At the battle of Antietam he was seriously wounded and carried off the field; and on his recovery in December he was assigned to the command of the 9th (late Burnside's) army corps.

SEMMES, Raphael, a naval officer in the service of the confederate states, born in Maryland, of Irish and Scotch parents, entered the U. S. navy in 1826, obtained a midshipman's warrant in 1832, and in 1833 was assistant at the depot of charts and instruments in Washington. He was promoted to be lieutenant in 1837, the next year was at the Norfolk navy yard, was afterward stationed at the Pensacola navy yard, and in 1843 was ordered to the command of the coast survey steamer Poinsett. In 1846 he commanded the brig Porpoise, and in 1848 the store ship Electra, both of the home squadron, and was next appointed inspector at the Pensacola navy yard. In 1855 he was promoted to be commander. He was unemployed from 1850 to 1857, and was then successively lighthouse inspector at Mobile and secretary of the lighthouse board (1859). He held this latter office at the breaking out of the civil war, when he resigned and was appointed commander in the confederate navy. He was assigned to the armed steamer Sumter, which was fitted out at New Orleans with a picked crew, and on June 30, 1861, ran the blockade of Pass à l'Outre at the mouth of the Mississippi, and in 26 days captured 9 American merchant vessels in the West India waters. He then proceeded to Southampton, England, where he remained for some time, closely watched by the U. S. steamer Tuscarora. When he put to sea, the Tuscarora was detained 24 hours by the British authorities, so that she failed to overtake him; but she followed him to the straits of Gibraltar, and so closely blockaded him in the port of Tangier, that he sold his vessel and returned to England. Here a fast steamer, the Alabama, or "290," was built for him, and in August he put to sea, and has since inflicted a great amount of damage upon the American merchant marine.

SERRANO, Francisco, duke de la Torre, a Spanish general and statesman, born toward the end of the 18th century. He took part in the war of independence, in the contest between Maria Christina and Espartero espoused the interests of the former, and in 1843 was one of the junta of Barcelona which declared the majority of Queen Isabel and deposed Espartero. After the restoration of Maria Christina he joined Narvaez in overthrowing the minister Olozaga. In 1846 his extraordinary influence over the queen gave rise to dissensions between her and her husband, and caused considerable scandal; and the ministry of Sotomayor attempted to remove him from the court, but was overthrown by him. The Pacheco-Salamanca ministry, which he supported, also fell before public opposition; and Serrano then, as an offset to the rising favor of Narvaez, caused the recall of Olozaga and Espartero. On the advent of Narvaez to power, Serrano accepted the office of captain-general of Granada; and he afterward vigorously opposed in the senate the different ministries which rapidly succeeded each other. In Feb. 1854, he was implicated in an insurrectionary movement at Saragossa, and exiled, but was restored by the revolution of the following July, and joined the "liberal union" which supported the coalition of Espartero and O'Donnell; and when those leaders separated, Serrano declared for the latter. In 1854 he had been made captain-general of artillery, which office he exchanged some time later for that of captain-general of New Castile. Madrid being thus under his control at the time of O'Donnell's *coup d'état* in July, 1856, he suppressed the insurrection in the Prado and the Retiro, and soon afterward superseded Olozaga as ambassador to Paris, whence he was recalled on the fall of O'Donnell in October. On his return he joined in the senate the powerful opposition which led to the downfall of Narvaez in Nov. 1857. In 1860 he was appointed captain-general of Cuba, and was succeeded in that office by Captain-General Domingo Dulce, Dec. 11, 1862.

SEVEN PINES. See Chickahominy.

SEYMOUR, Horatio, governor of New York, born in Onondaga co., N. Y., in 1811, studied law and entered upon its practice at Utica, but relinquished it after a time to devote his attention wholly to the care of the large estates left by his father and father-in-law. In politics he has always been strongly attached to the democratic party. In the autumn of 1841 he was elected a member of the state assembly, and in the following spring mayor of Utica, overcoming a previously strong whig majority there. In the legislature he at once took a prominent position, and he was annually reëlected to it till 1845, in which year he was chosen speaker. In 1850 he was nominated by his party for governor of the state, but was defeated by Washington Hunt by a majority of 262 votes. In 1852 he was again nominated, and was elected, defeating Mr. Hunt by 24,385 majority, and both his opponents by 5,000, a candidate having been nominated by the free soil party. In 1854, however, he was again defeated, four candidates being nominated, and Myron H. Clark, supported by the whigs and temperance men, receiving a majority of 309 over Mr. Seymour, who had during his term vetoed the so called "Maine law," and become identified with the opposition to restrictive legislation upon intoxicating liquors. In Jan. 1861, he delivered a speech at Albany strongly advocating concession and conciliatory measures toward the seceding states, which position he has since maintained in numerous public addresses. In Nov. 1862, he was again elected governor by 10,752 majority. He has several times been proposed by portions of his party as a candidate for the presidency.

SEYMOUR, Truman, brigadier-general of volunteers in the U. S. army, born in Burlington, Vt., Sept. 24, 1824. His early youth was passed in Albany. He was graduated at West Point in 1846, brevetted 2d lieutenant in the 1st artillery, and for gallantry at Cerro Gordo and at Contreras and Churubusco received the brevets of 1st lieutenant and captain. At the close of the Mexican campaign he returned to the military academy, where he was for several years assistant professor of drawing. He served in the last Florida war against the Indians, was appointed captain in the 1st artillery in Nov. 1860, and formed part of Major Anderson's command at Fort Sumter in April, 1861. He was transferred to the 5th artillery in May, joined the army of the Potomac in March, 1862, and was appointed chief of artillery of Gen. McCall's division. He was made brigadier-general of volunteers April 28, 1862, and commanded the left wing at the battle of Mechanicsville, June 26. In the battle of Antietam he led a brigade in Meade's division.

SHEA, John Gilmary, LL.D., an American author, born in New York city, July 22, 1824. He was educated for the law and admitted to the bar, but has devoted himself chiefly to historical studies, and is a member of nearly all the American historical societies. He has published many works of a historical character; has edited 4 vols. of the "Historical Magazine" (1858–'62); and edited and published from early MSS. the Cramoisy series of "Memoirs and Relations concerning the French Colonies in North America" (16 vols., 1857–'62), and the "Library of American Linguistics," a series of grammars and dictionaries of American languages, of which 6 volumes have appeared (1860–'62), and 5 more are now in the press.

SHEDD, William Greenough Thayer, D.D., an American clergyman, born in Acton, Mass., June 21, 1820. He was graduated at the university of Vermont in 1839, and at Andover theological seminary in 1843; became pastor of the Congregational church in Brandon, Vt., in 1844; was appointed professor of English literature in the university of Vermont in 1845; accepted the chair of sacred rhetoric in Auburn theological seminary in 1852; and was transferred to Andover as professor of church history in 1854. In 1862 he was installed as the associate pastor of the "Brick church" (Presbyterian) in New York. He has edited and published a translation of Theremin's "Rhetoric" (New York, 1850; 2d ed. with an introductory essay, Andover, 1859); Coleridge's works, with an introductory essay (7 vols., New York, 1853); "Discourses and Essays" (Andover, 1856); "Lectures upon the Philosophy of History" (Andover, 1856); a translation of Guericke's "Church History" (2 vols., Andover, 1857, 1863); and Augustine's "Confessions," with an introductory essay (1860).

SHEPLEY, George Foster, brigadier-general of volunteers in the U. S. army, born in Saco, Me., Jan. 1, 1819. He was graduated at Dartmouth college in 1837, and at the Harvard law school, continued the study of law at Portland, and began practice at Bangor. Afterward he removed to Portland, and under President Polk was appointed U. S. district attorney, an office which he held until the accession of President Lincoln. When the civil war broke out in 1861 he received a commission as colonel of the 12th Maine volunteers, his regiment being attached from the first to the command of Gen. B. F. Butler, whom he accompanied to Ship island and New Orleans, acting as commander of a brigade. On the surrender of New Orleans he was appointed commandant of the city, and subsequently brigadier-general and military governor of Louisiana.

SHERMAN, Thomas W., brigadier-general of volunteers in the U. S. army, born in Rhode Island about 1817, was graduated at West Point in 1836 and appointed 2d lieutenant in the 3d artillery; became 1st lieutenant March 14, 1838, and captain May 28, 1846; was brevetted major for gallantry at Buena Vista, Feb. 23, 1847; served in the north-west in 1857; became lieutenant-colonel of the 5th artillery May 14, and was appointed brigadier-general of volunteers May 17, 1861. He commanded a division in the first battle of Bull run, and was selected to command the land forces of the Port Royal expedition. After landing at Hilton Head, Nov. 7, he issued a conciliatory proclamation inviting the people of South Carolina to return to their allegiance to the national government. He remained in command at Port Royal until March, 1862, when he was superseded by Gen. Hunter, after which he was ordered to the army under Gen. Halleck before Corinth.

SHERMAN, William Tecumseh, major-general of volunteers in the U. S. army, born in Lancaster, O., Feb. 8, 1820. His father, one of the judges of the supreme court of Ohio, died in 1829, and William was educated in the family of the Hon. Thomas Ewing until he had reached the age of 16, when he entered the U. S. military academy. He was graduated in 1840, appointed 2d lieutenant in the 3d artillery, and promoted to be 1st lieutenant in 1841. He served in Florida during the Indian hostilities, and in 1846 was sent to California, where he held the rank of acting assistant adjutant-general of the 10th military department during the Mexican war. For his services in this capacity he was afterward brevetted captain, to date from 1848. In 1850 he married a daughter of Mr. Ewing, was appointed commissary of subsistence with the rank of captain, and was stationed successively at St. Louis and New Orleans. In Sept. 1853, he resigned his commission, and for about 4 years was at the head of a banking-house in San Francisco. He then became president of the military academy of the state of Louisiana. Resigning this office on the passing of the ordinance of secession by the Louisiana convention, he removed to St. Louis, and in June was appointed colonel of the 13th infantry, one of the new regiments of the regular army, his commission dating from May 14. He served under Gen. McDowell, and in the battle of Bull run commanded the 3d brigade of Tyler's division. Soon afterward he was appointed brigadier-general of volunteers, to date from May 17, and was ordered to the department of the Cumberland as second in command under Gen. Robert Anderson. Early in October Gen. Anderson was relieved on account of his health, and the command devolved upon Gen. Sherman. The persistency with which he urged the necessity of large reënforcements for the national armies in the West, and especially his statement, in reply to a question of the secretary of war, that 200,000 men would be required for a successful forward movement in the valley of the Mississippi, led to a rumor that he was insane. In November he asked to be relieved, and was placed under the command of Gen. Halleck at St. Louis, the department of the Cumberland being incorporated with Gen. Buell's department. During the winter Gen. Sherman was in command of a camp of instruction at Benton barracks. In the spring he was placed at the head of a division of Gen. Grant's army, with which he took part in the battle of Shiloh, and, according to Gen. Halleck's official report, "saved the fortune of the day on the 6th, and contributed largely to the glorious victory of the 7th." At Gen. Halleck's request, he was promoted to be major-general of volunteers, to date from May 1, 1862. He was subsequently ordered to Memphis, where he commanded a military district of Gen. Grant's department of the Tennessee, until Nov. 1862, when he was relieved in order to take the field.

SHIELDS, James, brigadier-general of volunteers in the U. S. army, born in county Tyrone, Ireland, in 1810. He emigrated to the United States in 1826, and after 6 years of adventure settled at Kaskaskia, Ill., where he studied law. He served in the state legislature, was chosen state auditor in 1839, and in 1843 was made judge of the supreme court of Illinois. In 1845 he removed to Washington, being appointed commissioner of the general land office. When the war with Mexico broke out he was appointed brigadier-general of volunteers, and for his gallant conduct at the battle of Cerro Gordo, where he was shot through the lungs, was brevetted major-general. He was again severely wounded at Chapultepec. At the close of the war he returned to Illinois, and in 1849 was elected to the U. S. senate. At the end of his term in 1855 he removed to Minnesota, and settled on lands awarded for his army services. When that territory adopted a state constitution, Gen. Shields was chosen one of her senators (1858), and sworn in for the short term, at the end of which he removed to California. At the commencement of hostilities in 1861 he was in Mexico for the benefit of his health, and also, it is said, for the purpose of selecting a location for an Irish colony; and as soon as possible he went to Washington, and placed himself at the disposal of the government. He was appointed brigadier-general of volunteers, and on the death of Gen. Lander was assigned to his command. He successfully opened the second campaign by the battle of Winchester, March 23, in the movements preparatory to which on the 22d he was severely wounded. He was afterward nominated major-general of volunteers, but the nomination was not confirmed. Since the battle of Port Republic, June 9, 1862, in which his troops were worsted by those of Gen. T. J. Jackson, he has not been in active service.

SHILOH, a locality so called from the name of a church there situated, near Pittsburg Landing, on the Tennessee river, in Hardin co., Tenn., where a battle was fought on April 6 and 7, 1862, between the U. S. forces under Gens. Grant and Buell, and the confederate army under Gens. A. S. Johnston and Beauregard. After the evacuation of Columbus, Ky., and Nashville, Tenn., by the confederates, the chief portion of their army was concentrated at and around Corinth, Miss., for the purpose of checking the operations of the Union army under Gen. Grant, then preparing to move from the Tennessee river as a base, and to cut off the confederate communications in western Tennessee with the southern and eastern states. On April 1 Gen. Grant with his army, numbering barely 40,000 effective men, was at Pittsburg Landing, on the W. bank of the Tennessee river, about 20 m. from Corinth, and Gen. Buell was coming across the country from Nashville by easy marches. Gen. Johnston heard of this approaching reënforcement, and determined to assume the offensive, hoping to destroy Grant's army before the arrival of Buell, his own force then numbering from 60,000 to 70,000. It was expected by him that he would have time to defeat the Union force, seize their stores and munitions, and fall back to Corinth, his strong position, before aid could arrive. This decision was reached in the confederate council on April 2, but the slowness of the march from Corinth to the vicinity of Pittsburg Landing, owing to heavy rains, prevented the army from making the attack before the morning of the 6th. The position of the Union army at that time was as follows. From Pittsburg Landing the main Corinth road goes westward; at the distance of a mile or two it branches into two roads, and again, at a short distance, each of these two roads into two others. Upon and between the several roads thus formed were posted the 5 divisions of Gen. Grant's force. The confederate army, commanded by Gen. Johnston, under whom were Beauregard, Bragg, Polk, Hardee, Breckinridge, Cheatham, and some others in subordinate positions, advanced in 3 lines of battle, the plan of attack being to pierce the Union centre, and then attack the severed wings. The action was opened soon after sunrise on April 6, Grant's army being taken by surprise, and the divisions of Gens. W. T. Sherman and Prentiss being first attacked. Sherman's division consisted of 3 brigades; one of these was scattered at once; the other two held their ground well for a considerable time, but were finally compelled to retreat. The division of Gen. Prentiss fought obstinately, but was badly placed, and after a time was broken into fragments, one of which, comprising 3 regiments, with Gen. Prentiss at their head, was captured and sent to the confederate rear. When Sherman's division fell back, the enemy poured in upon that of Gen. McClernand. As long as any effective force of Sherman's command remained, McClernand held his place, and kept the confederates from gaining the Corinth road; but when he was left unsupported he was compelled to retire. By 10 A. M. Johnston's army occupied the camps of Gens. Prentiss, Sherman, and McClernand, and the brunt of the battle fell on the divisions of Gens. Hurlbut and W. H. L. Wallace, which held a position between the front and the river. From 10 A. M. till 4 P. M. those divisions were exposed to a series of terrible assaults; 3 or 4 times the confederates charged upon the Union forces, but were each time repelled with heavy loss. At last, however, the division of Gen. Hurlbut was forced back, and soon after that of Wallace in turn retired, the general himself being mortally wounded. At 4½ P. M. the camp of the latter division was the only one held by the Union army, which had been forced to within half a mile of the landing. At this juncture the advance of Gen. Buell appeared on the other side of the river, and, although only a portion of Nelson's division was able to effect a crossing near the close of the day's battle, its presence gave courage to the discomfited army. It was believed that if the confederates advanced again that night it would be upon the centre and left; accordingly all the available artillery was collected and arranged in a semicircle to protect the landing, and bear on the advancing column when it should appear. This had hardly been accomplished when the confederates moved, as was anticipated, from the Union left and centre, for the decisive assault of the day; they were met by a terrible fire from the guns just placed, and also from two gunboats which had quietly steamed up a creek where the confederates thoughtlessly exposed their flank. The result was a cessation of the first day's fight, during the afternoon of which Gen. Johnston had been killed, and Gen. Beauregard had assumed the chief command. Throughout the succeeding night the gunboats bombarded the confederate position with such effect as to prevent an advance, and even to compel a partial retirement. On the morning of the 7th, Gen. Buell's army having crossed the river and taken their ground, the combined forces numbered perhaps 45,000, and their order of battle placed Gen. Lewis Wallace on the right, Gen. Nelson on the left, and Gens. T. L. Crittenden, A. McD. McCook, Hurlbut, McClernand, and Sherman between them. Gen. Wallace had come up from down the river in the night, had taken a position in front of certain confederate batteries on the Union right, and by 7 A. M. on the 7th opened the day's action by shelling these, with such effect that the confederates retired, taking their guns with them. Almost at the same moment with this attack, Gen. Nelson's division advanced, meeting no determined resistance till 10½ o'clock, when the confederates rallied and made a desperate onset, before which the Union line wavered; at this critical moment, however, a battery manned by regulars came to their aid, and then for nearly two hours the battle raged fiercely at that point; but the confederates were at length overborne, and a charge by brigades drove them through and beyond the camps they had the day before occupied. When the line under Nelson wavered, as stated, the advancing column of the confederates came upon Gen. Crittenden's division, on his right; for a time there also was a varying contest, finally resulting in the retirement of the confederates. The course of events was much the same with the divisions of McCook, Hurlbut, and McClernand. Meanwhile, earlier in the day, the confederates had endeavored to turn the Union right, where Gen. Wallace was posted; he called on Gen. Sherman for assistance, and carried on the fight for some time with his artillery and sharpshooters till reënforcements came up; the conflict there continued with various success till 4 P. M., when the confederates finally retreated, the action having some time before ceased elsewhere along the line. The Union loss in this battle was 1,735 killed, 7,882 wounded, and 4,044 missing; that of the confederates, according to the official report of Gen. Beauregard, was 1,728 killed, 8,012 wounded, and 959 missing.

SIBLEY, Henry H., a general in the service of the confederate states, born in Louisiana about 1815, reported killed by his own soldiers near El Paso, Texas, about May 1, 1862. He was graduated at West Point in 1838, and appointed to the 2d dragoons; became captain Feb. 10, 1847; was brevetted major for gallantry at Medelin, Mexico, March 25, 1847; and in Feb. 1861, became major of the 1st dragoons, being at that time in service against the Navajoes in New Mexico. He resigned May 13, 1861, and was appointed a brigadier-general in the confederate army, and led a force from Texas for the conquest of New Mexico. He attacked Fort Craig, Jan. 5, 1862, but was repulsed and compelled to retreat. His supplies being cut off, his troops, according to report, became mutinous, and, attributing to him their defeat, shot him. He was the inventor of the Sibley tent. (See Tent, vol. xv.)

SICKLES, Daniel E., brigadier-general of volunteers in the U. S. army, born in the city of New York, Oct. 20, 1822. He was educated at the university of New York, but was not graduated, studied law, was admitted to the bar in 1844, became a member of the legislature in 1847, and took a prominent position among the leaders of the democratic party. In 1853 he was appointed corporation attorney. The same year he accompanied Mr. Buchanan to England as secretary of legation, and remained there until 1855, when he returned home. In the autumn of that year he was elected to the state senate after a bitter contest, and in 1856 was chosen a representative in congress. On Feb. 27, 1859, he killed Philip Barton Key, U. S. district attorney for the District of Columbia, shooting him in the streets of Washington for improper intimacy with Mr. Sickles's wife. He was tried for murder, but acquitted. In 1861 he raised the "Excelsior brigade" in New York, and was commissioned colonel of one of the regiments composing it. In Sept. 1861, he was nominated by the president brigadier-general of volunteers, but the nomination was rejected by the senate in March, 1862. A second renomination was confirmed, and he received a commission dating from Sept. 3, 1861. He fought in the battles of the Chickahominy campaign, his brigade forming part of Hooker's division of Gen. Heintzelman's (the 3d) army corps. He succeeded to Gen. Hooker's command when that officer took the 1st army corps, and led that division in the battles of Antietam and Fredericsburg. He was reëlected to congress in 1860.

SIGEL, Franz, major-general of volunteers in the U. S. army, born at Zinsheim, Baden, Nov. 18, 1824, was graduated at the military school at Carlsruhe, entered the military service of Baden, and became chief adjutant of the army in 1847, but, being deeply interested in the revolutionary movements of 1848, resigned his commission to devote himself to German unity and republicanism. Placed at the head of a force which the revolutionary government of Baden had determined to send into Hesse-Darmstadt to protect the liberals there, he was about to march when he was superseded by Mieroslawski; but on June 1, 1848, the revolutionary government being changed, he was appointed minister of war. After the defeat of Mieroslawski by the prince of Prussia at Waghäusel and at Ettlingen, Sigel, who had participated in these battles, though he had not commanded, placed himself at the head of the beaten and demoralized force, and by a skilful retreat brought it safely within the walls of the fortress of Rastadt, whence he went alone to concentrate another body of revolutionary troops in the lake district of Baden. The prince of Prussia invested Rastadt, and the provisional government took to flight, whereupon Sigel withdrew into Switzerland, crossing the frontier July 11. Expelled by the Swiss government, he made his way in 1850 to the United States, and settled in New York city as a teacher of mathematics in the academy of Dr. Rudolph Dulon, in Market street, whose daughter he afterward married. At the same time he interested himself in the volunteer militia of the state, and was for several months major of the 5th regiment, under Col. Schwarzwälder. In Sept. 1858, he removed to St. Louis, and found employment there as a teacher. On the outbreak of the civil war in 1861, he became colonel of the 3d Missouri volunteers, enlisted for three months. Serving under Gen. Lyon, he took part in the capture of Camp Jackson; was sent to the south-west of Missouri, and arrived at Springfield June 23; fought the battle of Carthage July 5, when with about 1,200 men he engaged 5,000, and in retreating inflicted very severe punishment upon the confederates; took part in the battle of Wilson's creek, and directed the retreat from Springfield, arriving at Rolla Aug. 19. He was promoted to be a brigadier-general Aug. 22, his commission being dated May 17, 1861; commanded a division in the army under Fremont which in October marched to the south-west in pursuit of the confederates under Price; was sent again to the south-west by Gen. Halleck in Feb. 1862, and commanded a division in the army which again pursued Price; and bore a prominent part in the battle of Pea ridge. Becoming dissatisfied with his relations with Gen. Halleck, the commander of the department, he resigned in May; but his resignation was not accepted, and having been promoted to be a major-general, he was ordered to Washington and placed in command at Harper's Ferry, where he arrived June 2. When on June 26 Fremont declined to serve under Gen. Pope and was relieved of his command, Gen. Sigel was placed at the head of Fremont's army corps. In this command he served through the campaign of the army of Virginia under Pope, took a prominent part in the second battle of Bull run, Aug. 29–30, and on Sept. 14 was placed in command of the 11th army corps, which now (Dec. 1862) forms the reserve of the army of the Potomac. During the march of that army from Warrenton to Fredericsburg, Nov. 15–20, Gen. Sigel occupied the gaps of the Blue ridge, after which he withdrew toward Washington and established his head-quarters at Fairfax Court House. Among the documents accompanying the annual report of the secretary of war, laid before congress Dec. 1, 1862, were some letters of Gen. Pope to the general-in-chief, speaking of Gen. Sigel as unfit to command, with regard to which the latter has demanded a court of inquiry.

SLOCUM, Henry Warner, major-general of volunteers in the U. S. army, born at Delphi, N. Y., Sept. 24, 1827. He was graduated at West Point in 1852, appointed 2d lieutenant in the 1st artillery, and ordered to Florida in the autumn of the same year. He was promoted to be 1st lieutenant in 1855, resigned his commission in 1857, and returning to New York settled at Syracuse and commenced the practice of the law, for which he had prepared himself by previous study. He was appointed colonel of the 27th regiment New York volunteers in May, 1861, and joining the army of McDowell when it was about to advance toward Manassas, was assigned to the brigade of Col. Andrew Porter in the division of Col. Hunter. In the battle of Bull run he was shot through the thigh. On Aug. 9 he was appointed brigadier-general of volunteers, and assigned to the command of a brigade in Franklin's division of the army of the Potomac; was at the battle of West Point, Va.; took command of the division upon Gen. Franklin's being assigned to the command of the 6th provisional army corps, May 15, 1862; served at the battle of Gaines's mill, June 27, being sent with his division to reënforce Gen. F. J. Porter, then severely pressed by the enemy; and held the right of the main line at the battle of Charles City road, June 30, maintaining his ground against superior numbers. He was made a major-general July 4, took part in the battles of South mountain and Antietam, and in October was assigned to the command of the corps previously under Gen. Banks.

SLOUGH, John P., brigadier-general of volunteers in the U. S. army. Before the war broke out he was a lawyer in Cincinnati. At the beginning of 1862 he raised a regiment among the Rocky mountains, known as the 1st Colorado volunteers, was chosen colonel, took the field in February, and marched into New Mexico, where with his own regiment, 2 batteries of artillery, and 1,300 other troops, he defeated the confederates in several engagements. After they evacuated New Mexico he resigned, but was soon nominated a brigadier-general of volunteers, and assigned to a brigade under Gen. Sigel. He was relieved from this command at his own request in July, was afterward appointed military governor of Alexandria, and is now (December) a member of the court martial for the trial of Gen. Fitz John Porter.

SMITH, Caleb Blood, secretary of the interior in the cabinet of President Lincoln, born in Boston, Mass., April 16, 1808. Six years afterward his parents emigrated to Cincinnati. At an early age he commenced his studies at the Cincinnati college, and completed them at the Miami university, Oxford, O. He studied law at Cincinnati and Connersville, Ind., was admitted to the bar in 1828, began practice in Connersville, and was a member of the Indiana house of representatives from 1833 to 1836, and in 1840; was speaker of the house in 1835–'6; and for several years was one of the fund commissioners of Indiana. In 1840 he was a presidential elector on the ticket of Gen. Harrison. He was a member of congress from Indiana from 1843 to 1847, and, after serving as one of the commissioners to adjust claims against Mexico, resumed the practice of his profession at Cincinnati. In 1856 he was one of the presidential electors on the republican ticket in Ohio, having been connected with the republican party from its organization. He had previously been a whig. In 1858 he removed from Cincinnati to Indianapolis, and practised his profession until he was appointed secretary of the interior by President Lincoln in 1861. On Dec. 22, 1862, the senate confirmed his nomination as U. S. circuit judge for Indiana.

SMITH, Charles Ferguson, major-general of volunteers in the U. S. army, born in Pennsylvania, died at Savannah, Tenn., April 25, 1862. He was a son of Dr. Samuel B. Smith, U. S. A., was graduated at West Point in 1825 and appointed 2d lieutenant in the 2d artillery, and from 1829 to 1831 was assistant instructor of infantry tactics at the military academy. For the next 7 years he was adjutant of the academy, and from 1838 to 1842 instructor of infantry tactics and commandant of cadets. He was promoted to be 1st lieutenant in 1832 and captain in 1838, and for his gallantry at Palo Alto and Resaca de la Palma, at Monterey, and at Contreras and Churubusco, won the successive brevets of major, lieutenant-colonel, and colonel. In June, 1848, he was acting inspector-general in Mexico. In 1854 he became major in the 1st artillery; the next year lieutenant-colonel of the 10th infantry; and in Sept. 1861, colonel of the 3d infantry. He was appointed brigadier-general of volunteers Aug. 31, 1861, and for some time had command of the U. S. forces in Kentucky. He commanded a division under Gen. Grant at the capture of Fort Donelson, in which he greatly distinguished himself, and was afterward ordered to take possession of Savannah, Tenn., where he died of dysentery soon after his arrival. He was commissioned major-general in March, 1862.

SMITH, Edmund Kirby, a general in the service of the confederate states, born in St. Augustine, Fla., about 1826, was graduated at West Point in 1845 and appointed brevet 2d lieutenant in the 5th infantry; distinguished himself at Palo Alto and Resaca de la Palma, May 9, and became 2d lieutenant in the 7th infantry, Aug. 9, 1846; was brevetted lieutenant for gallantry at Cerro Gordo, April 18, and captain for gallantry at Contreras and Churubusco, Aug. 20, 1847; became acting assistant professor of mathematics at West Point, Oct. 23, 1849, 1st lieutenant in March, 1851, and captain in the 2d cavalry in March, 1855; served under Van Dorn in western Texas, and distinguished himself in action with the Comanches, May 13, 1859, in which he was severely wounded; was promoted to be major in 1860, and resigned his commission April 6, 1861. He was immediately appointed a brigadier-general in the confederate army, served under Gen. J. E. Johnston in the army of the Shenandoah, and brought up the fresh brigade whose arrival decided the battle of Bull run in favor of the confederates, on which occasion he was wounded. He was married, Sept. 24, 1861, at Lynchburg, Va., to Miss Cassie Selden, after which he commanded the 4th division of the army of the Potomac, and remained with that army in its winter quarters near Bull run. He was then promoted to be a major-general, and immediately after the capture of Fort Donelson he was ordered, April 8, 1862, to command the department of East Tennessee, and issued from Knoxville, April 18, a proclamation enforcing martial law. He led the advance of Gen. Bragg into Kentucky in Aug. 1862, and was made lieutenant-general in October following.

SMITH, Green Clay, brigadier-general of volunteers in the U. S. army, born in Madison co., Ky., July 2, 1832. At the age of 15 he volunteered as a private in the Mexican war, was elected lieutenant in the 1st regiment Kentucky cavalry, and served for one year. He then returned home and completed his studies at Transylvania university, both in the academic and law departments. He practised law in Madison co. until 1859, when he removed to Covington. In 1861 he was elected to the legislature of Kentucky, and while a member of that body was most decided in his adherence to the general government. He was appointed colonel of the 4th Kentucky cavalry in Feb. 1862, served under Gen. Dumont, was wounded at Lebanon, Tenn., and was made brigadier-general of volunteers in June.

SMITH, Gustavus Woodson, a general in the service of the confederate states, born in Kentucky about 1823, was graduated at West Point in 1842 and appointed brevet 2d lieutenant of engineers; was acting assistant professor of engineering at West Point from Aug. 31, 1844, to Sept. 24, 1846, and was appointed assistant professor Nov. 1, 1849. He became 2d lieutenant Jan. 1, 1845, and was brevetted 1st lieutenant for gallantry at Cerro Gordo, April 18, and captain for gallantry at Contreras and Churubusco, Aug. 20, 1847. He was commandant of sappers, miners, and pontoniers from March 10, 1847, to May 22, 1848; became 1st lieutenant in March, 1853; and resigned Dec. 18, 1854, in order to join a projected expedition against Cuba, under Gen. Quitman. It has been stated that Smith received from the Cuban fund $10,000 in consideration of resigning his commission to take part in this enterprise. After its failure he was for a time employed in the iron works of Cooper and Hewitt at Trenton, N. J., but in 1856 removed to New York, and was appointed to the office of street commissioner under the city corporation. This office he retained until Aug. 1861, when his resignation was announced, some time after he had left the city to enter the confederate army, going by way of Kentucky, about the same time with his friend and official deputy Mansfield Lovell, now also a confederate general. Though his health had long been precarious and he was suffering from a partial paralysis, he was at once appointed a major-general, and has since served in Virginia. At the battle of Fair Oaks he succeeded to the command after Gen. J. E. Johnston was wounded. He is now (Dec. 1862) in command at Petersburg.

SMITH, Martin Luther, a general in the service of the confederate states, born in New York about 1823, was graduated at West Point in 1842 and appointed brevet 2d lieutenant in the topographical engineers; became 2d lieutenant Nov. 1, 1843; was brevetted 1st lieutenant for meritorious conduct during the war with Mexico; became 1st lieutenant in March, 1853, and captain in July, 1856; and resigned his commission April 1, 1861. He is now a brigadier-general in the confederate army.

SMITH, William Farrar, major-general of volunteers in the U. S. army, born at St. Albans, Vt., Feb. 17, 1824. He was graduated at West Point 4th in his class in 1845 and assigned to the corps of topographical engineers, in which he became 2d lieutenant in 1849, 1st lieutenant in 1853, and captain in 1859. He was acting assistant professor of mathematics at the military academy from 1846 to 1848, and assistant professor of mathematics in 1855, and was at various times employed on the surveys of the Lake Superior region, of the Rio Grande, Texas, and of the military road to California, and on the Mexican boundary commission. When the civil war broke out he was secretary of the lighthouse board at Washington. Obtaining leave of absence, he took command of the 3d Vermont volunteers, and became brigadier-general Aug. 13, 1861. He was highly distinguished during the Chickahominy campaign, commanding a division in the corps of Gen. Franklin. He was promoted to be major-general of volunteers July 4, 1862, participated in the battle of Antietam, and commanded the 6th corps in the battle of Fredericsburg, Dec. 13.

SPECTRUM ANALYSIS, the name given to a recent method of chemical analysis, conceived and proposed in general form by Prof. G. Kirchhoff of Germany, in which the presence of certain chemical elements is determined by corresponding and peculiar sets of colored bands, imparted by those elements or compounds containing them to the spectra obtained from flames in which such substances are sublimed or volatilized. In reference to the solar spectrum and the transverse dark bands or lines of Fraunhofer marking it, see Optics, vol. xii. p. 539; see also Sun, vol. xv. p. 188.—Wollaston prepared the way for the subsequent discoveries of Fraunhofer and others, by adopting the plan of analyzing with the prism a narrow band of light admitted between parallel knife edges, a method by which the spectrum from a prism of given material and angle becomes a sort of scale or map, to a fixed position in which every gradation of hue and every dark band can be exactly referred. Among the observations upon the spectrum, partially anticipating Kirchhoff's principle, were those of Fraunhofer (1815), of Talbot (1826), of Brewster (1842), of Wheatstone (1835), and of Foucault (1849). In 1853 Prof. A. J. Angström, of Sweden, applying Euler's principle of the reciprocation and absorption by bodies of the same sorts of undulations they are capable of emitting when themselves originally excited (referred to under Light and Optics), was led to the view that any body at a glowing heat emits the same rays (refrangibilities) of light and heat as, in the like condition, it will absorb if they impinge upon it. The first decisive and general proof in reference to light of the principle assumed by Euler and Angström, was furnished by Kirchhoff's experiments in 1859, with flames charged with lithium and sodium. A volatilizable compound of any such element being burned in or otherwise diffused through a flame, the incandescent particles of each communicate to the general light of the flame an excess of certain rays, these appearing in the spectrum as brighter bands crossing it in certain parts and having the exact colors proper to such parts, being generally different in situation and hue for the different elements introduced into the flame, and always or generally the same for each element. The best light for showing these results is the intensely hot but feebly luminous flame of a simple hydrogen burner. When, however, a flame is thus colored, or charged with excess of certain rays, if through this the light of another and more brilliant flame colored with the same element be passed to be analyzed, it is seen that while the general illumination of the spectrum then obtained is increased, the previous bright lines characterizing the element are now replaced by dark lines or those relatively very faint; in a word, the spectrum characteristic of the given element is exactly reversed. In the prosecution of the new field of research opened by these experiments, Prof. R. Bunsen soon became associated. The more complex apparatus of prism and telescopes at first employed is now replaced by Mousson's or other form of "spectroscope" (already in common use), the former consisting of a tube blackened internally, with a perforated plate at one end for admission of the light, and at the other the prism, close to which the eye can be applied, while, by the ordinary methods of a scale or micrometer screw, the prism can be rotated to bring the parts of the spectrum successively into view, and the relative positions of the lines observed can be exactly known. When several elements which show systems of bright bands are at the same time in the flame, it is at least generally true that their several spectra coexist; and the instances in which certain lines proper to different elements coincide are as yet few. The spectrum of sodium is the simplest yet found; and Bunsen has determined that by it the presence in a flame of less than the $\frac{1}{180,000,000}$ part of a grain is detected. Of calcium, barium, strontium, potassium, and lithium, the least quantities detectible vary from $\frac{1}{60,000}$ to $\frac{1}{100,000,000}$ grain; so that no other chemical test approaches this in delicacy. Among results of the new analysis are, the finding that lithium is in fact an element widely diffused in nature, and the discovery of three new metals. (See Cæsium, Rubidium, and Thallium, in this supplement.) Very recent observations upon the spectrum by Dr. Robinson, Mitscherlich, Debray, and others, show that a much more extended study of the influence of mixture and combination of chemical elements, of degree of heat, and other conditions, is requisite, before the method of analysis by spectrum observations can become complete and positive; but very many trustworthy indications are already afforded by it, especially with use of the simple hydrogen flame.—The application of the new method to an attempted determination of at least some of the chemical constituents of the sun, is briefly noticed under Optics and Sun. Kirchhoff, having satisfied himself that the bright lines characteristic of several of the metals correspond exactly in place with as many dark lines of the solar spectrum, infers that these dark lines are produced by a reversal similar to that above shown, and hence indicate the existence of corresponding chemical elements both volatile in the luminous atmosphere of the sun, and also incandescent in its solid nucleus. Accepting this conclusion, it appears that the presence, in the solar nucleus and photosphere, of sodium, potassium, magnesium, calcium, chromium, nickel, and iron, at least, is already made out; the probability, by the doctrine of chances, of the known coincidence of the 60 iron lines with as many of the sunbeam, without a common cause, being but 1 in 1,000,000,000,000,000,000. The possibility of explaining on the new principle the peculiar colors of the light of stars (astrometry) is also suggested. Some results, however, obtained with instruments of very high dispersive power and apparently of great perfection, by Profs. O. N. Rood and J. P. Cooke, of this country ("American Journal of Science," Sept. 1862), appear to cast a doubt on the question of actual coincidence of the terrestrial chemical and the solar lines.

SPRAGUE, William, governor of Rhode Island, born at Cranston, R. I., Sept. 12, 1830. He is a nephew of William Sprague, who was governor of Rhode Island in 1838-'9, and U. S. senator from 1842 to 1846. He has been engaged from boyhood in the calico print works founded by his father and uncle, and in which he is now a principal partner. He was nominated for governor in 1860 by a portion of the republican party, and elected in consequence of a coalition between them and the democrats. In Feb. 1861, foreseeing the outbreak of the civil war, he offered to the president and Gen. Scott 1,000 men and a battery of artillery, and as soon as the call for troops was made hastened to raise regiments, and went with them to the field. The commission of brigadier-general of volunteers was offered to him in May, but he refused it. He fought with the Rhode Island troops at Bull run, where his horse was shot under him, and in several engagements of the Chickahominy campaign. He was reëlected governor in 1861 and 1862, and chosen U. S. senator for 6 years from March 4, 1863.

SOUTH MOUNTAIN. See Antietam.

STAHEL, Julius, brigadier-general of volunteers in the U. S. army, born in Hungary in 1825. He entered the military service of Austria, and rose from the ranks to be 1st lieutenant; but on the breaking out of the Hungarian revolution he espoused the cause of his native country, and served through the war on the staffs of Görgey and Guyon. On the triumph of the Austrian arms he emigrated to Germany, thence to England, and finally to New York city, where he became a journalist, and in 1859 established the "New York Illustrated News," which he conducted for about a year. In May, 1861, he was appointed lieutenant-colonel of the 8th New York volunteers, Col. Blenker, and commanded that regiment in the battle of Bull run, his colonel having charge of a brigade. He was soon afterward commissioned colonel of the 8th, had charge of a brigade in Blenker's German division, and was appointed brigadier-general of volunteers Nov. 12, 1861. He is now (Dec. 1862) in command of a division in Gen. Sigel's (the 11th) army corps.

STANLEY, David S., brigadier-general of volunteers in the U. S. army, born in Ohio about 1834, was graduated at West Point in 1848 and appointed brevet 2d lieutenant in the 2d dragoons; became 2d lieutenant in the 1st cavalry in March, 1855; distinguished himself by pursuing and defeating a body of Comanches in the Wichita mountains, Feb. 25, 1859; became captain in the 4th cavalry March 16, 1861; and was appointed brigadier-general of volunteers Sept. 28. He is now (Dec. 1862) chief of cavalry in the army of the Cumberland, under Gen. Rosecrans. On Dec. 11 he entered the town of Franklin, Tenn., at the head of a cavalry force, defeating a body of confederates and destroying a quantity of property.

STANLY, Edward, military governor of North Carolina in the existing civil war, born in Newbern, N. C. He is the eldest son of the Hon. John Stanly of Newbern, long a prominent citizen of that state. A lawyer by profession, he was chosen in 1836, as a whig, to represent the 8th district in the 27th congress, and was reëlected in 1838 and in 1840. Having left congress, he was elected in 1844, 1846, and 1848 to represent Beaufort, where he resided, in the house of commons of North Carolina, and in the last year was speaker of the house. In 1847 he was attorney-general of the state. He was now again returned to congress, taking his seat in 1849, and by another reëlection held it until March 4, 1853. In congress he was known as one of the ablest of the whig representatives. He voted for the compromise measures of 1850, but was not thought in the South to be sufficiently devoted to the defence and preservation of slavery. After concluding his last term of service in congress in 1853, he emigrated to California, and settled at San Francisco in the practice of his profession. Attaching himself to the republican party, he became in 1857 its candidate for the office of governor of the state, and received 21,040 votes, while John B. Weller, candidate of the democratic party, received 53,122, and G. W. Bowie, candidate of the American party, received 19,471. After the capture of Newbern by the Union forces, March 14, 1862, and the occupation of other points in North Carolina, the president invited Mr. Stanly to enter upon the office of military governor of that state. Accepting the appointment, he arrived at Newbern May 24, and has since remained in the discharge of his functions.

STANTON, Edwin M., an American lawyer and statesman, born at Steubenville, Ohio, in 1815. His parents were of Quaker origin, and removed to Ohio from Culpepper co., Va.; his maternal grandfather formerly owned there the farm on which the battle of Cedar mountain was fought, Aug. 9, 1862. He entered Kenyon college in 1833, studied there about a year, after which he became a bookseller's clerk at Columbus, O., and as such pursued his education; studied law with L. D. Collier, Esq., at Steubenville, and was admitted to the bar at Columbus in 1836. He commenced the practice of his profession at Cadiz, Harrison co., and was elected prosecuting attorney of the county in 1837, soon after which he removed to Steubenville and there acquired an extensive practice. In 1839 he was elected by the legislature of Ohio reporter of the decisions of the supreme court, which office he discharged for its full term of 3 years. His practice now extended over all the south-eastern portion of Ohio and the neighboring counties of Virginia. During this period he defended at Washington C. J. McNulty, clerk of the house of representatives, charged with defalcation, and secured his acquittal. In 1848 he removed to Pittsburg, Penn., where he became the leader of the bar, and began to be much employed in the supreme court at Washington. His argument in the case of the Wheeling suspension bridge is among the most noted of his efforts during this period. In 1857 he removed to Washington, and in 1858 was appointed by the Hon. J. S. Black, then U. S. attorney-general to go to California to plead the cause of the United States in some land cases of great importance to be decided by the courts in that state. When, owing to the course of the government in the secession troubles, Mr. Cass resigned his office as secretary of state, Dec. 14, 1860, Attorney-General Black became secretary of state, and Mr. Stanton was appointed to succeed him as attorney-general. In this place he rendered great services to the country by his firmness and zeal in resisting, as far as possible, the efforts of the secession leaders who were then actively engaged in preparing for the civil war that soon afterward broke out. He went out of office with Mr. Buchanan's administration, March 4, 1861, and resided at Washington, laboring in his profession, until Jan. 20, 1862, when he was appointed secretary of war, which office he still holds (Dec. 1862).

STEEDMAN, James Barrett, brigadier-general of volunteers in the U. S. army, born in Union co., Penn., in 1819. At the age of 19 he went to Ohio, where in 1837 he became a contractor to aid in the construction of the Wabash and Erie canal. In 1843 he was elected by the democrats to the state legislature. When intelligence of the discovery of gold in California was received, Mr. Steedman was among the first to organize a company and cross the plains in quest of it. Returning to Ohio in 1850, he was elected in the succeeding year a member of the board of public works for the state. During the administration of Mr. Buchanan he was elected printer to congress. In 1861 he took the field as colonel of the 14th Ohio volunteers, was ordered to western Virginia, took part in the battle of Philippi, and his regiment at the end of their 3 months' term of service having reënlisted for the war, he joined Gen. Buell in Kentucky. He was appointed brigadier-general of volunteers, July 17, 1862.

STEELE, Frederic, brigadier-general of volunteers in the U. S. army, born in Delhi, Delaware co., N. Y., was graduated at West Point in 1843, appointed brevet 2d lieutenant in the 2d infantry, and served during the Mexican war under Gen. Scott. For gallantry and meritorious conduct at the battles of Contreras and Chapultepec he was brevetted 1st lieutenant and captain. He commanded his company at the taking of the city of Mexico. At the close of the Mexican war he was ordered to California, was appointed adjutant by Gen. Riley, and remained in that position until ordered to the western frontier. He served in Missouri at the commencement of the civil war in 1861, was appointed major in the 11th infantry, and for his conduct at the battle of Wilson's creek, Aug. 10, 1861, was made brigadier-general of volunteers, Jan. 29, 1862. In Dec. 1862, he commanded at Helena, Ark.

STEINWEHR, Adolph Wilhelm August Friedrich, baron von, brigadier-general of volunteers in the U. S. army, born at Blankenburg in the duchy of Brunswick, Sept. 25, 1822.

His father was a major in the ducal service, and his grandfather a lieutenant-general in the Prussian army. He was educated at the military academy of the city of Brunswick, and entered the army of the duchy as lieutenant in 1841. In 1847 he resigned and came to the United States for the purpose of offering his services to the government in the Mexican war; but failing to obtain a commission in the regular army, he returned to Germany after marrying a lady of Mobile. In 1854 he again came to America, and purchased a farm near Wallingford, Conn. At the commencement of the civil war he raised a regiment, the 29th New York volunteers, which he commanded at the first battle of Bull run, forming part of the reserve under Col. Miles. On Oct. 12, 1861, he was commissioned brigadier-general of volunteers, and appointed to the command of the 2d brigade of Blenker's division. This division was attached in May, 1862, to the Mountain department under Gen. Fremont. When Sigel assumed command of the corps, after the organization of the army of Virginia, Gen. Steinwehr was promoted to the command of the 2d division, and participated in the campaign on the Rapidan and Rappahannock in August.

STEVENS, Isaac Ingalls, brigadier-general of volunteers in the U. S. army, born in Andover, Mass., in 1817, killed in the battle near Chantilly, Fairfax co., Va., Sept. 1, 1862. He was graduated at West Point in 1839, ranking first in the same class with Gens. Halleck, Ricketts, and Ord, and was commissioned 2d lieutenant of engineers; became 1st lieutenant in 1840, and was adjutant of his corps in 1847–'8. From 1840 until the beginning of the Mexican war he was employed upon the fortifications of the New England coast. In Mexico he was attached to Gen. Scott's staff, and was brevetted captain and major for gallantry at Contreras and Churubusco and at Chapultepec. At the attack upon the capital he was in Gen. Worth's division, and was severely wounded in the San Cosme suburb. After the war he was attached to the coast survey as principal assistant to Prof. Bache, and had charge of the office in Washington. In 1851 he published "Campaigns of the Rio Grande and Mexico, with Remarks on the recent Work of Major Ripley" (8vo., New York). On the accession of President Pierce (1853), who was his warm personal and political friend, he resigned his commission and was appointed governor of Washington territory, and at the same time placed in charge of the survey of the northern route for the Pacific railroad. He subsequently published a narrative of the expedition. During his term of office as governor he was involved in a conflict with the chief justice of the territory, Edward Lander, brother of the late Gen. Lander, and declared the territory under martial law. On May 7, 1856, he caused Judge Lander to be arrested in the court room. His action was disapproved by the authorities at Washington. After the accession of President Buchanan he represented Washington territory as delegate in congress for two terms. He was a member of the national democratic convention which met at Charleston and Baltimore in 1860, supported the nomination of Mr. Breckinridge, and was chairman of the Breckinridge executive committee at Washington; but when the secession of the southern states became imminent, he strongly advised the president to dismiss Secretaries Floyd and Thompson. Being on the Pacific coast when he heard of the fall of Fort Sumter, he hastened to Washington, was appointed colonel of the 79th New York (highlanders), and on Sept. 28, 1861, was commissioned brigadier-general of volunteers. He was assigned a command under Gen. Sherman in the expedition to Port Royal, commanded the principal column in the unsuccessful assault on the enemy's position near Secessionville, June 16, 1862, and was ordered to reënforce Gen. McClellan after the retreat of the army of the Potomac from before Richmond. He was subsequently attached to Gen. Pope's command, and had charge of a division in the series of battles fought by the army of Virginia.

STONE, Charles P., brigadier-general of volunteers in the U. S. army, born in Greenfield, Mass., in 1826, was graduated at West Point in 1845 and appointed brevet 2d lieutenant of ordnance; was acting assistant professor of ethics at West Point from Aug. 1845, to Jan. 1846; was brevetted 1st lieutenant for gallantry at Molino del Rey, Sept. 8, and captain for gallantry at Chapultepec, Sept. 13, 1847; became 1st lieutenant in Feb. 1853; and resigned his commission Nov. 17, 1856. He afterward took up his residence at Washington, and on the approach of the civil war was appointed by Gen. Scott, Jan. 2, 1861, to organize and command the militia of the District of Columbia. He discharged this duty with so much zeal and efficiency that on May 14, 1861, he was commissioned as colonel of the 14th infantry, and on May 24 took a prominent part in the movement of the national forces into Virginia and the occupation of Alexandria. On May 28 he was attached to the staff of Gen. McDowell, was soon after assigned to the command of a brigade at Alexandria, and subsequently of a brigade in the army under Gen. Patterson. After Gen. McClellan took command of the army of the Potomac, Col. Stone was promoted to be a brigadier-general of volunteers, Aug. 4, with rank from May 17, 1861, and took command of a division whose head-quarters were at Poolesville, Md. The troops engaged in the unfortunate battle of Ball's bluff, Oct. 21, belonged to his division and acted under his orders; and after that battle his conduct was discussed in congress, and reports unfavorable to his loyalty began to be circulated. Finally, on Feb. 9, 1862, he was arrested by order of Gen. McClellan and imprisoned in Fort Lafayette, where for a considerable time no person was allowed to see him. No official charges were preferred against him, nor was a court martial ordered; but a publication in the journals of the day, apparently authorized, set forth that he was accused of misbehavior at Ball's bluff, of holding improper intercourse with the enemy, and other forms of official unfaithfulness. Finally, in Aug. 1862, he was released from imprisonment and ordered to Washington, but as yet (December) has neither been tried nor restored to duty.

STONEMAN, George, brigadier-general of volunteers in the U. S. army, born at Busti, Chautauqua co., N. Y., Aug. 8, 1822. He was graduated at West Point in 1846, commissioned brevet 2d lieutenant in the 1st dragoons, stationed at Fort Leavenworth, and took charge of one of the first supply trains from that post to Santa Fé, where he was attached to the Mormon battalion as quartermaster, and sent with it to California in 1847. He continued in active service on the Pacific coast, in New Mexico, and in Texas, attaining the rank of captain in the 2d cavalry (March, 1858), until 1861, when, being in command of Fort Brown, Texas, he made a determined resistance to the designs of the secession leaders, and refused to obey the order of his superior, Gen. Twiggs, for the surrender of the government property. As however the withdrawal of the national troops from the state was agreed upon, without waiting for government transports he chartered a steamer, evacuated Fort Brown, and arrived at New York March 15. In June he was appointed major in the 1st cavalry, and served in western Virginia as inspector-general until Aug. 1861, when he was made brigadier-general of volunteers, appointed chief of cavalry, and showed great efficiency in organizing that arm of the service. After the evacuation of Yorktown by the confederates his command of cavalry and flying artillery pursued and overtook them, and thus brought on the battle of Williamsburg, May 5, 1862. After the second battle of Bull run he was placed in command of the division previously under the late Gen. Kearny in Heintzelman's corps; and when Gen. Heintzelman was appointed to the command of the defences of Washington, Gen. Stoneman succeeded him as commander of the 3d army corps.

STORRS, Henry Randolph, an American lawyer and politician, born in Middletown, Conn., in 1787, died in the city of New York, July 29, 1837. He was graduated at Yale college in 1804, studied law at Whitestown, N. Y., was admitted to the bar in 1807, practised first at Champion, Jefferson co., N. Y., for a short period, and afterward at Whitestown, and represented the Oneida district in congress from 1818 to 1832, with the exception of a single term. In the latter year he retired from public life, declining again to be a candidate, and removed to the city of New York, where he practised law until his death. For 5 years he was the first judge of Oneida co. In congress he had a high reputation as an orator. He was a zealous supporter of J. Q. Adams's administration, and during most of his congressional service kept a full journal of public events, especially in regard to the contest for the presidency between Adams and Jackson, which is still in manuscript.—**William Lucius**, an American jurist, brother of the preceding, born in Middletown, Conn., in 1795, died in June, 1861. He was graduated at Yale college in 1814, and admitted to the bar of New York in 1817. He settled in practice at Middletown, was a representative in congress from 1829 to 1833, and speaker of the Connecticut house of representatives in 1834; was reëlected to congress in 1839; became a justice of the supreme court of his native state in 1840, and from 1856 to the time of his death was chief justice. In 1846-'7 he was also professor of law in Yale college.

STRASBURG, a village of Shenandoah co., Va., 18 m. S. W. from Winchester; pop. about 650. On May 25, 1862, Gen. Fremont with a strong force left Franklin, in Pendleton co., and by forced marches over difficult mountain roads reached the neighborhood of Strasburg, 100 m. distant, on the 31st. About 5 m. from the latter place his advance encountered on the same afternoon the army of the confederate Gen. Jackson, retreating up the Shenandoah valley from Winchester, and a sharp skirmish ensued, which was terminated at nightfall without material advantage to either side. Gen. Bayard entered Strasburg so suddenly that the confederate provost marshal and 200 men were taken prisoners. Early on the morning of June 1 Jackson continued his retreat, taking the road from Strasburg to Staunton, and Fremont continuing the pursuit came up with him about midway between Strasburg and Woodstock. The cavalry of the advance brigade, under Col. Cluseret, broke the cavalry of the confederate Gen. Ashby by an impetuous charge, but was checked by a body of infantry posted in the adjoining woods. Cluseret immediately opened an artillery fire, to which the enemy opposed a battery of 6 guns, designed to cover their rear guard, while the main column continued its retreat. The confederate guns were soon silenced, and the Union cavalry by a rapid movement succeeded in capturing a body of infantry and 3 guns, which the enemy in vain endeavored to retake. Fremont now brought up his main body and formed in line of battle, but Jackson was already well on the way to Woodstock, where on the evening of June 2 he halted for the night in a secure position.

STRINGHAM, Silas Horton, an American naval officer, born in Middletown, Orange co., N. Y., Nov. 7, 1798. He entered the navy as midshipman in 1810, and served in the frigate President, then under command of Commodore Rodgers, till 1815, being on board during the fight with the Little Belt and the Belvidere. In 1815 he was transferred to the brig Spark, Capt. Thomas Gamble, one of Commodore Decatur's squadron, and took part in the Algerine war. In 1816, while the Spark was lying at Gibraltar, a French brig coming into the bay capsized in a heavy gale. Young Stringham volunteered to go to her relief, and succeeded in reaching the vessel in a small boat manned by 6 seamen, and took off 5 of the crew; but finding it impossible to return to Gibraltar till the gale subsided, he made for the Algesiras shore, and had nearly reached it when his boat was swamped by the waves, and one of his crew and two of the rescued Frenchmen perished. He served as lieutenant in 1819 on board the Cyane, which conveyed the first settlers to the colony of Liberia. While on the African coast he was placed in command of a boat and sent in search of slavers. He captured 4, and was made prize master and sent home with his prizes. In 1821 he was promoted to a first lieutenancy, and ordered to the Hornet, then on the West India station, and while attached to her aided in the capture of a notorious pirate ship and a slaver. From 1825 to 1829 he was on duty at the Brooklyn navy yard; then sailed as first lieutenant of the Peacock to search for the sloop of war Hornet, supposed to have been lost near Tampico; and while engaged in the search was transferred to the Falmouth as her commander and sent to Carthagena, whence he returned to New York in 1830. For the next 5 years he was engaged in shore duty; in 1835 was ordered to the command of the sloop of war John Adams, then in the Mediterranean squadron; in 1837 was appointed second in command in the Brooklyn navy yard; in 1842 was ordered to the razee Independence; in the following year was assigned to the command of the Brooklyn navy yard; and in 1846 took command of the ship of the line Ohio, and took part in the bombardment of Vera Cruz. He was next for a short time commander of the Brazil squadron; in 1851 had command of the Gosport navy yard; from 1852 to 1855 of the Mediterranean squadron, his flag ship being the frigate Cumberland; and from 1855 to 1859 of the Charlestown navy yard. In March, 1861, he was called to Washington as a member of a naval court martial, and while there was appointed flag officer of the Atlantic blockading squadron and ordered to the Minnesota as his flag ship. In May this squadron was divided, and the cruising ground extending from Key West to Chesapeake bay assigned to Flag Officer Stringham. With Gen. B. F. Butler he commanded the joint naval and military expedition which captured Forts Hatteras and Clark, Aug. 27 and 28. On Sept. 23 he was relieved from his command, at his own request. On Aug. 1, 1862, he was made a rear admiral on the retired list.

STUART, James E. B., a general in the service of the confederate states, born in Patrick co., Va., about 1835, was graduated at West Point in 1854 and appointed brevet 2d lieutenant in the mounted rifles, 2d lieutenant in the 1st cavalry in March, and 1st lieutenant in Dec. 1855; distinguished himself in a fight with the Cheyennes, June 29, 1857, when he was severely wounded; became captain in 1860, and resigned May 14, 1861. Entering the service of Virginia, he was appointed colonel of a regiment of cavalry; commanded all the confederate cavalry at the first battle of Bull run; distinguished himself in an attack on the national forces at Lewinsville, Va., Sept. 13, 1861; was promoted to be a brigadier-general, and soon after a major-general; conducted a brilliant incursion within Gen. McClellan's lines on the Pamunkey river, June 13, 1862, at the head of 2 regiments, 1,200 cavalry, and 2 guns, destroying much property and causing very great alarm; surprised Gen. Pope's head-quarters at Catlett's station, near the Rappahannock, Aug. 22, in the midst of a thunder storm, capturing Pope's papers and correspondence, with the private property of his staff; and most brilliant of all, at the head of a body of 1,800 cavalry with 4 cannon, passed from south of the Potomac Oct. 9, crossing between Williamsport and Hancock on the right wing of Gen. McClellan's army, traversed Maryland, and passing Mercersburg, Penn., at noon, Oct. 10, entered Chambersburg after dark of that day, which was surrendered without resistance. Stuart and his troopers remained there during the next day, took a considerable quantity of spoil, and destroyed a vast amount of valuable property, and, retreating with the same celerity as they had displayed in their advance, crossed the Potomac on McClellan's left, thus making a circuit around that general's army, without serious loss. He is justly regarded as a cavalry officer of great merit. He is married to a daughter of Gen. Philip St. George Cooke, of the U. S. army.

STURGIS, Samuel Davis, brigadier-general of volunteers in the U. S. army, born in Shippensburg, Cumberland co., Penn., in 1822. He was graduated at West Point in 1846 and commissioned brevet 2d lieutenant in the 2d dragoons, served during the Mexican war under Gen. Taylor, and was taken prisoner while on a reconnoissance previous to the battle of Buena Vista, but exchanged soon afterward. At the close of the war he was ordered to California, and subsequently to New Mexico and the territories, and for his energy and skill against the Indians was promoted to be captain. He was then placed in command of Fort Smith, Ark., and remained there until the civil war in 1861. All his officers resigned their commissions and joined the southern confederacy; and being cut off from communication with the war department, he evacuated Fort Smith on his own responsibility, thus saving his command and the government property. In May he was appointed major in the 1st cavalry, and served in Missouri under Gen. Lyon, whom he succeeded in command after his death at the battle of Wilson's creek. He was promoted to be brigadier-general of volunteers in August, assigned to duty with the army in Tennessee, and afterward to the command of the department of Kansas. In 1862 he was called to Washington to assist the military governor, and assigned to the command of the fortifications around that city. In the battles of South mountain, Antietam, and Fredericsburg he commanded the 2d division of the 9th army corps.

SUMMERVILLE, the county seat of Nicholas co., Va., on an affluent of Gauley river. The 7th Ohio volunteers, Col. Tyler, were surprised here on the morning of Aug. 26, 1861, by an overwhelming confederate force, consisting of cavalry, artillery, and infantry. Col. Tyler immediately sent orders to his train to move back toward Gauley Bridge, and with his command successfully cut his way through the enemy, losing 200 out of 900 men in the attempt. The Union troops formed again and prepared to fight, but were not subsequently attacked or pursued. The confederates lost colors and a few prisoners, and were believed to have suffered severely in killed and wounded.

SUMNER, Edwin Vose, major-general of volunteers, and brevet major-general in the U. S. army, born in Boston, Mass., in 1796. He was educated in Boston and at the Milton academy, and was never a pupil at West Point, having been appointed in March, 1819, 2d lieutenant in the 2d infantry by the commander-in-chief, Gen. Brown. He remained in that regiment until 1833, holding various staff appointments, and serving with distinction in the Black Hawk war. When the 2d regiment of dragoons was raised by Gen. Jackson, he was commissioned captain in it, and was constantly employed in service on the Indian frontier, except for a time when he commanded the school of cavalry practice at Carlisle, Penn., until the outbreak of the Mexican war. On June 30, 1846, he was promoted to be major. Placed by Gen. Scott in command of the mounted rifles, he led the famous cavalry charge at Cerro Gordo, April 18, 1847, was wounded, and obtained the brevet of lieutenant-colonel. He commanded the reserves at Contreras and Churubusco, and the entire cavalry at the battle of Molino del Rey, where he held in check 5,000 Mexican lancers who menaced the American left. For gallant conduct on this occasion he was brevetted colonel. On July 13, 1848, he was commissioned lieutenant-colonel of the 1st dragoons. After the war he was placed in command of the department of New Mexico, where, on the withdrawal of Gov. Calhoun in 1851, he was the only representative of the government. In 1854 he was ordered to Europe on official business, and in 1855 promoted to be colonel of the 1st cavalry. In 1856, being in command at Fort Leavenworth, Kansas, he incurred the displeasure of the secretary of war, Jefferson Davis, by his conduct in the troubles between the free-state and the proslavery men, and was removed. In July of the next year he led an expedition against the Cheyenne Indians, and defeated them on the Solomon's fork of Kansas river. In 1858 he was made commander of the department of the West. He was selected by Gen. Scott to accompany Mr. Lincoln from Springfield to Washington in Feb. 1861, and on March 16 was appointed brigadier-general in the regular army in place of Gen. Twiggs. He was then ordered to the command of the department of the Pacific; but being anxious for active service in the field, he was recalled to the East, and in March, 1862, appointed commander of the 1st army corps in the army of the Potomac. He commanded the left wing at the siege of Yorktown, and performed a conspicuous part in all the battles of the Chickahominy campaign, during which he was twice slightly wounded. For his services before Richmond he was appointed major-general of volunteers, to date from July 4, and brevet major-general in the regular army, to date from May 31. On the reorganization of the army after Gen. Pope's campaign in Virginia, the 2d corps was assigned to him, and with it he took part in the battle of Antietam, where he was wounded. He now commands the right grand division of the army of the Potomac, which bore the brunt of the battle of Fredericsburg, Dec. 13, 1862.

SUSQUEHANNAS, a tribe of Indians on the lower waters of the river of that name. They were known to Smith when he explored the Chesapeake; were of the Iroquois stock, ruled all the neighboring Algonquin tribes, and at one time nearly destroyed the Mohawks. They were always friendly to European settlers of all nations. By the Iroquois tribes they were called Gandastogue or Conestogue, or simply Andastes (from *andayta*, a pole to make a cabin roof). The Swedes, who were their allies, and the Dutch called them Minquas. They learned from these more of the science of war than other tribes, and had their palisaded town fortified by cannon. In the war between the Hurons and Iroquois, they sided with the former, and after their fall soon had to sustain the whole power of the cantons. Although greatly reduced by the small pox, they kept up the war with spirit from 1661 to 1676, but were at last subdued, Maryland and Virginia in 1675 assailing them in their distress. They then became a dependency of the league. They were among the first to enter into friendly relations with Penn, which were always preserved on their part. The celebrated Logan was the son of a chief of this tribe, and his character is an example of that which they bear in history. In 1763 the scanty remnant of the tribe was on mere suspicion massacred by the Paxton boys at Lancaster. Of the language of the Susquehannas or Minquas a vocabulary has fortunately been preserved by Campanius in his *Nya Sverige* (Stockholm, 1704).

SYKES, George, major-general of volunteers in the U. S. army, born in Maryland about 1823, was graduated at West Point in 1842 and appointed brevet 2d lieutenant in the 3d infantry; became 1st lieutenant in Sept. 1846; was brevetted captain for gallantry at Cerro Gordo, April 18, 1847; was assistant commissary of subsistence with Twiggs's division of the army of Mexico; became captain in Sept. 1855, major of the 14th infantry May 14, 1861, and brigadier-general of volunteers Sept. 28. He has since commanded a division, consisting in great part of regulars, in the 5th corps of the army of the Potomac, under Gens. Fitz John Porter and Butterfield, and has been present in the battles fought by that army.

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TATNALL, Josiah, captain in the navy of the confederate states, born in Georgia, entered the U. S. navy in 1812, became lieutenant in 1818, commander in 1838, and captain in 1850. In 1822 he was stationed at the Brooklyn navy yard, in 1839 at that of Charlestown, Mass., and about 1850 at that of Pensacola, having meantime performed many years' sea service, including a participation, as commander of the Spitfire, in the attacks on Tampico, Panuco, and Vera Cruz in 1847. From 1856 to 1859 he was flag officer of the East India squadron, and in June, 1859, with a chartered steamer in which he was observing the attack on the Peiho forts, towed the British reserves into action when the fortunes of the day appeared doubtful; and he afterward passed through the hottest fire in a barge to visit Admiral Hope, who had been wounded. This action secured him the lasting gratitude of the English, and was generally approved at home, though a palpable breach of neutrality. When the war broke out in 1861 he was in command of the naval station at Sackett's Harbor, N. Y. Resigning his commission, he went to Charleston, S. C., obtained a commission in the confederate service, and improvised a fleet with which he made a faint show of resistance to Flag Officer Du Pont at the capture of Port Royal.

TAYLOR, George W., brigadier-general of volunteers in the U. S. army, born at Clinton, Hunterdon co., N. J., in 1808, died at Alexandria, Va., Sept. 1, 1862. In 1827 he received a midshipman's appointment in the U. S. navy, but resigned after a cruise of 3 years, and was employed in agricultural pursuits until the time of the Mexican war, when he obtained a commission as 1st lieutenant in the 10th infantry, and was promoted to be captain in 1848. After the war he resided in California for 3 years, and then returned to Hunterdon co. and engaged in mining and the manufacture of iron. In 1861 he was chosen colonel of the 3d New Jersey volunteers, which formed part of the reserve division at the first battle of Bull run. In March, 1862, his regiment participated in the occupation of Manassas, and in May was in the division under Gen. Franklin. He was in the reserve at the battle of West Point, and immediately afterward was appointed acting brigadier-general of the 1st New Jersey brigade, and ordered to join the advance under Gen. Stoneman. He commanded his brigade in the 7 days' contest before Richmond, having received his commission as brigadier-general of volunteers May 9, 1862. In the action of Gaines's hill his command was under the hottest fire. He was engaged in the second battle of Bull run, where he was mortally wounded.

TAYLOR, Nelson, brigadier-general of volunteers in the U. S. army, served during the Mexican war as captain in the 1st New York volunteers, known as Col. Stevenson's "California regiment," and afterward settled in California, where he was elected sheriff of Mariposa county and state senator. Having returned to New York city, he was in 1861 an unsuccessful democratic candidate for congress in the 5th district. When the war broke out he raised the 72d New York volunteers (3d regiment Excelsior brigade), which he commanded during the Chickahominy campaign; the regiment belonged to Gen. Sickles's brigade of Hooker's division, in Gen. Heintzelman's army corps. Col. Taylor was acting brigadier at Williamsburg, served under Gen. Pope in Virginia, and for his services in the field was nominated a brigadier-general of volunteers.

TCHOOKTCHI, a government of Eastern Siberia, forming the N. E. extremity of the Asiatic continent, and bounded N. by the Arctic ocean, N. E. by Behring's straits, separating it from North America, E. by the sea of Kamtchatka, S. by Kamtchatka and Okhotsk, and S. and S. W. by Yakootsk. A range of mountains enters the territory from Okhotsk in the S. and crosses it obliquely to Behring's straits. The coasts are indented by several deep bays. The largest river is the Anadir, which has an easterly course to Onemen bay, an arm of the gulf of Anadir on the sea of Kamtchatka. On this stream, in the S. part of the government, is the town of Anadirsk. The inhabitants, called Tchooktchis, apparently a branch of the Koriaks, their neighbors to the S., are a nomadic people, but more provident than the wandering Tunguses. Those who have settled along the coast support themselves chiefly by killing whales, seals, and walruses. The walrus with them is almost as useful as the reindeer among the people of the interior. Their language is said to bear no affinity to the Asiatic idioms, but to resemble that of the Esquimaux; and some authorities do not hesitate to ascribe to them an American origin.

TERRILL, William R., brigadier-general of volunteers in the U. S. army, born in Virginia, killed at the battle of Perryville, Ky., Oct. 8, 1862. He was graduated at West Point in 1853 and brevetted 2d lieutenant in the 3d artillery, and in the following November transferred to the 4th artillery and made 2d lieutenant. During 1855 he was assistant professor of mathematics at West Point, and in March, 1856, was promoted to be 1st lieutenant. In May, 1861, he was made captain in the 5th artillery, and was allowed leave of absence to raise a regiment for service in Kentucky. Shortly afterward he was sent to that state, and commanded a battery in the division of Gen. McCook. He was subsequently put in charge of a brigade in Gen. Buell's army, was greatly distinguished at the battle of Shiloh, and for the bravery and ability there displayed was nominated a brigadier-general of volunteers.

TERRY, Alfred Howe, brigadier-general of volunteers in the U. S. army, born in Hartford, Conn., Nov. 10, 1827. He was educated at New Haven, studied law, and was admitted to the bar in 1848. He became clerk of the courts for the county of New Haven in June, 1854, serving till June, 1860, when he resigned and spent a few months travelling in Europe, returning in December. Long inclined to military studies, he had for years understood that a trained militia is essential to the safety of a republic; and when the military laws of the state were revised in 1854, and the organized militia reduced to not more than 8 regiments of volunteers, he was commissioned as colonel of the 2d (or New Haven county) regiment. When the president, after the bombardment of Fort Sumter, called on the states for 75,000 men, Col. Terry immediately offered his services to the governor of Connecticut, and was commissioned to command the 2d Connecticut regiment of the 3 months' volunteers. His regiment had an honorable part at Bull run, retiring in good order from the field when the day was lost, and in connection with the 1st and 3d Connecticut volunteers bringing up the rear in the retreat, and saving a large amount of government property. His services were particularly acknowledged in the report of Gen. Keyes to Gen. McDowell. The 3 months for which his regiment was enlisted having expired, he was immediately authorized to raise a regiment (the 7th Connecticut) for 3 years. His regiment left New Haven Sept. 17, and was attached to the southern expedition under the command of Gen. T. W. Sherman. It was detailed Nov. 7 to occupy the captured fort on Hilton Head, and was stationed on Tybee island during the winter, and a great portion of the immense labor which terminated in the bombardment and capture of Fort Pulaski was performed by the men under Col. Terry's command. To this regiment, therefore, was assigned the honor of occupying the fort after its surrender. He was promoted to be brigadier-general of volunteers March 24, 1862, and during the summer had command of the posts and forts on the Atlantic coast of Florida. More recently, he commanded one of the two brigades in the battle of Pocotaligo.

THALLIUM (Gr. ϑαλλος, a twig, a green bough), a metal very similar to lead, but in some respects to tin, the existence of which was first suspected in 1860 by Mr. Crookes of London, from the appearance, in the spectrum obtained upon optical examination of seleniferous and telluriferous residues from the manufacture of sulphuric acid, of a before unobserved bright green band or line. (See Spectrum Analysis.) Subsequently Mr. Crookes separated the metal chemically, as still later and led by the like circumstance, though without knowledge of its previous discovery, did M. Lamy of France. The former communicated his researches to the royal society, London, June 19, 1862; a translation of the paper of the latter appeared in the London "Chemical News" for July 19 following. As first set free from its combinations, thallium often appears as a dense brown powder. The metal fuses at 290°C., and is volatile at a red heat. Freshly obtained in the mass or bar, it is nearly as white as silver, and on cutting presents a brilliant metallic lustre. Fused in a current of hydrogen, it is white with a bluish gray tinge, resembling aluminum. Its density is 11.9; its symbol may be inferred to be Th; equivalent not given. Thallium is extremely soft and malleable; it is easily scratched with the nail and cut with a knife. It marks paper with a yellowish streak. It has a marked tendency to crystallize, and the ingots obtained by fusion crackle when bent, like those of tin. But its distinguishing physical property is that of imparting to any pale or colorless flame in which it or its compounds may be volatilized a very rich green color, which, on analysis of the light by aid of the spectroscope, is found to be due to the presence of a single green band as sharply defined as the yellow of sodium or the red of lithium, and which on the micrometric scale of the instrument occupies the division 120.5°, sodium being at 100°. An extremely small quantity of the metal affords a brilliant line, and $\frac{1}{50,000,000}$ part of a grain of it existing simply or in a compound within the flame is thus recognized. Thallium tarnishes rapidly in the air, coating with a thin pellicle of oxide, which then protects the portion within from oxidation. This oxide is readily soluble, has a decidedly alkaline reaction, and the taste and smell of potassa. Thus, both optically and chemically the metal approximates to the character of those of the recognized alkalies. Thallium is attacked with energy by chlorine above 200° C., melting and becoming incandescent under the action, and producing a yellowish liquid. Iodine, bromine, sulphur, and phosphorus also combine with it. Recently prepared, the metal preserves its lustre in water; it does not decompose pure water, even at boiling, but effects the decomposition when an acid is present, setting free hydrogen. Sulphuric and nitric acids most easily attack the metal especially by aid of heat, giving white, crystalline, and soluble sulphate and nitrate. Thallium is not very rare in nature; it exists in many kinds of pyrites, having been found in that from Belgium, Nantes, Bolivia, and elsewhere; also in specimens of native sulphur, including that from Lipari. The metal may be reduced from its salts by an electric current, or with charcoal at high temperatures, or by precipitation with zinc; and M. Lamy obtained, by a battery of a few Bunsen's elements, an ingot weighing 14 grammes.—The name chosen by Mr. Crookes was nearly preoccupied by the application of the term thalium by Dr. Owen to a supposed new metal found by him in the mineral thalite, from the northern shore of Lake Superior ("American Journal of Science," 1852).

THOMAS, George Henry, major-general of volunteers in the U. S. army, born in Southampton co., Va., July 31, 1816. He was graduated at West Point in 1840 and commissioned brevet 2d lieutenant in the 3d artillery, and joined his regiment in Florida. For his services in the Florida war he was brevetted 1st lieutenant in 1841. He served at Fort Brown during its bombardment by the Mexicans, won the brevets of captain at Monterey and major at Buena Vista, and in 1849 was again sent to Florida to serve against the Indians. From 1851 to 1854 he was instructor of artillery and cavalry in the military academy. He was then ordered to California, where he commanded Fort Yuma until 1855, when he was promoted to be major of the 2d cavalry. From 1856 to 1860 he was on duty in Texas, commanding his regiment for the last 3 years of that time against the Indians and on exploring expeditions. In 1861 he was ordered to Carlisle barracks, Penn., was promoted to be colonel of the 5th cavalry May 3, and ordered to report to Gen. Patterson, commanding the department of Pennsylvania. He was then assigned to a brigade, and retained that command until Aug. 26, 1861, when he was appointed brigadier-general of volunteers and ordered to Kentucky. He commanded at the battle of Mill Spring, Jan. 19, 1862, when the confederates were completely defeated. His division was then ordered to Nashville, where it arrived March 1, and as soon as supplies could be obtained marched to Pittsburg Landing, but being in the reserve did not arrive in time to take part in the battle of Shiloh. He was appointed major-general of volunteers April 25, 1862, and assigned to the command of the right wing of the army of the Tennessee, under Gen. Halleck. The forces in the West being subsequently reorganized, he was transferred to the department of the Ohio (Gen. Buell), and appointed commander in the field of all three corps embraced in that department. On Sept. 30 he was ordered to supersede Gen. Buell in the chief command; but on the remonstrance of himself and other officers, that general was for the time reinstated.

THOMAS, Lorenzo, adjutant-general of the U. S. army, born in Delaware about 1805, was graduated at West Point in 1823 and appointed 2d lieutenant in the 4th infantry; was adjutant of his regiment from March, 1828, to Feb. 1831; became 1st lieutenant March 17, 1829, and captain in Sept. 1836; was assistant quartermaster from Sept. 3, 1836, to July 7, 1838; became assistant adjutant-general with the rank of major July 7, 1838; was brevetted lieutenant-colonel for gallantry at Monterey, Sept. 23, 1846; became major of the 4th infantry, Jan. 1, 1848, and relinquished his rank in the line; became assistant adjutant-general with the rank of lieutenant-colonel, July 15, 1852; succeeded to the functions of adjutant-general on the resignation of Col. S. Cooper, March 7, 1861; was brevetted brigadier-general May 7, and promoted to that rank Aug. 3, 1861.

TILGHMAN, Lloyd, a general in the service of the confederate states, born in Maryland about 1817, was graduated at West Point in 1836 and appointed brevet 2d lieutenant in the 1st dragoons; resigned his commission Sept. 30, 1836, and became division engineer on the Baltimore and Susquehanna railroad, which place he held for two years, when he was engaged to survey the line of the Norfolk and Wilmington canal. Leaving that employment in 1838, he was engineer to the Eastern Shore railroad till in 1839 he was attached to the Baltimore and Ohio railroad, in which place he remained nearly two years. Volunteering in the Mexican war, he was aide-de-camp to Col. Twiggs at Palo Alto and Resaca de la Palma; commanded a body of volunteer partisans in Oct. 1846; superintended the defences of Matamoras in Jan. 1847; commanded a light artillery company in Col. Hughes's regiment of Maryland and District of Columbia volunteers from May, 1847, to July 24, 1848, when the regiment was disbanded; became principal assistant engineer on the western division of the Panama railroad in 1849; and after leaving that place settled in Kentucky, and on the outbreak of the civil war in 1861 was appointed by the authorities of that state, who then proposed to remain neutral between the two parties, to the command of the western division of the state militia, with the rank of colonel. On May 6, 1861, he had at Cairo, Ill., an official interview with Col. B. M. Prentiss, then commanding the U. S. forces there, in which he assured the latter that he had no hostile purpose toward the national government. Subsequently, however, he became a brigadier-general in the confederate service, commanded at Fort Henry, and was one of the prisoners captured there by Flag Officer Foote, Feb. 6, 1862. He was imprisoned in Fort Warren in Boston harbor, but was exchanged in July, and afterward attached to the army under Gen. Bragg, and ordered to Vicksburg to take command of prisoners to be exchanged.

TOWER, Zealous Bates, brigadier-general of volunteers in the U. S. army, born in Massachusetts about 1822, was graduated at West Point at the head of his class in 1841 and appointed 2d lieutenant of engineers; was acting assistant professor of engineering at West Point from Aug. 31, 1842, to April 4, 1843, and assistant professor to Aug. 20, 1843; was brevetted 1st lieutenant for gallantry at Cerro Gordo, April 18, captain for gallantry at Contreras and Churubusco, Aug. 20, and major for gallantry at Chapultepec, Sept. 8, 1847; became

1st lieutenant April 24, 1847, captain in July, 1855, major Aug. 6, 1861, and brigadier-general of volunteers Nov. 23, 1861. He commanded a brigade in the second battle of Bull run, Aug. 29, 30, 1862, where he was wounded.

TRICOUPIS, or Trikupi, Spiridion, a Greek statesman and historian, born at Missolonghi in 1791. He is the son of a primate of Missolonghi, was educated in France and England, in 1820 aided Lord Guilford in the establishment of the university of Corfu, and became known to Europe through an elaborate oration on Lord Byron, who had been his intimate friend, delivered at Missolonghi two days after his death. He took an active part in the Greek revolution, and in 1821 was president of the council, being associated with his brother-in-law Mavrocordato and Colletti. From 1835 to 1838, and again from 1841 to 1843, he was envoy extraordinary and minister plenipotentiary to London; in the latter year, after the revolution of September, in which he was a prime mover, he was appointed minister of foreign affairs and of public instruction; was sent as envoy extraordinary to France in 1850, on occasion of the blockade of the Greek ports by England; and in the same year was again sent as minister to the court of St. James, which office he still holds (1862), having in 1855 refused to exchange it for that of president of the council and minister of foreign affairs, on the dissolution of the Mavrocordato ministry. He enjoys a great reputation as an orator; his oration on Lord Byron has been translated into nearly all the European languages, and a volume of his impromptu speeches during the revolution has been published in Paris (1836). His chief work, however, is his "History of the Greek Revolution," of which 3 volumes have been published (ʽΙστορια της ʽΕλληνικης επαναστασεως, London, 1853–'6), written in ancient Greek words, but with modern inflections and forms of syntax.

TRIMBLE, Isaac R., a general in the service of the confederate states, born in Virginia about 1801, killed at the battle of Cedar mountain, Aug. 9, 1862. He was graduated at West Point in 1822 and appointed 2d lieutenant in the 1st artillery, and resigned May 31, 1832, to devote himself to the profession of a civil engineer. From 1832 to 1834 he was employed on the Boston and Providence railroad, from 1835 to 1838 was chief engineer of the Baltimore and Susquehanna railroad, and also from 1836 to 1838 of the York and Wrightsville railroad. In 1842 he became engineer and general superintendent of the Philadelphia, Wilmington, and Baltimore railroad, and retained that office until 1849. At the outbreak of the civil war he was residing in Baltimore, took part in the secession movements there, and was appointed April 22, 1861, by the mayor and board of police, to prevent the exit of provisions from the city. He appears also to have had command of the troops assembled in the city by the same authorities; but after its occupation by the national forces he withdrew to the South, and was made a confederate brigadier-general.

TROYON, Constant, a French painter, born in Sèvres in 1813. In his youth he was employed as a painter of porcelain in the royal manufactory of Sèvres, which employment he gave up for that of landscape and animal painting. Since 1833 he has been a regular exhibitor at the annual exhibitions in Paris, and at the present day stands perhaps in his peculiar department at the head of the modern French school. His most interesting works comprise a series of landscapes, still in progress, illustrating Sèvres, St. Cloud, and other places in the vicinity of Paris. Among his animal and figure pieces may be mentioned "The Fair of Limousin," "The Cattle Market," "The Watering Place," "The Poacher," "The Working Oxen," "Hounds at Rest and in Motion," "Going to Market," &c., most of which have been finely engraved. At the great exposition of 1855 he received a medal of the first class, and was made an officer of the legion of honor.

TURCHIN, John Basil, brigadier-general of volunteers in the U. S. army, born in the valley of the Don, Russia, Jan. 18, 1822. At 14 years of age he was sent to the military school at St. Petersburg, and after graduating received a lieutenant's commission in the Russian army. On his promotion to the rank of captain on the general staff he again entered the military academy, and remained there 3 years. At the beginning of the Crimean war he received an appointment on the staff of the crown prince (the present emperor), corresponding in the U. S. service to the first assistant adjutant-general to a commander of division. The plan adopted for the defence of the coast of Finland was prepared by him. Having imbibed democratic ideas, he came to America in 1856, and was employed in the engineer department of the Illinois central railroad company. In July, 1861, he was appointed colonel of the 19th Illinois volunteers, and served with his regiment in Missouri, Kentucky, and Alabama, where he took an active part in the capture of Huntsville, Tuscumbia, and Decatur. Charges having been brought against him, he was subjected to a court martial, but pending the investigation was promoted to be brigadier-general of volunteers, July 17, 1862.

TUTTLE, James Madison, brigadier-general of volunteers in the U. S. army, born in Summerfield, Monroe co., O., Sept. 24, 1823. He was brought up on a farm in Iowa, afterward engaged in trade in Van Buren co., Iowa, and was elected in 1855 sheriff, and in 1857 and 1859 recorder and treasurer of the county. At the outbreak of the civil war he joined the 2d Iowa regiment as captain, became successively lieutenant-colonel and colonel, distinguished himself at Fort Donelson and Shiloh, and in the latter engagement commanded a brigade until Gen. W. H. L. Wallace was mortally wounded, after which he led the 2d division. For his services in these two battles he was appointed brigadier-general of volunteers, June 9, 1862. He has since commanded at Cairo, Ill.

TYLER, Daniel, brigadier-general of volunteers in the U. S. army, born at Brooklyn, Conn., Feb. 22, 1799. His father, Capt. Daniel Tyler, was an officer of artillery in the war of the revolution. The son was graduated at West Point in 1819, and appointed 2d lieutenant in the light artillery, in which he served until 1821, when on the reorganization of the army he became 2d lieutenant in the 5th infantry in May, and in the 1st artillery in August. In 1834 he was promoted to be 1st lieutenant. He was adjutant of the artillery school of practice at Fortress Monroe in 1826–'7; visited France to study the improvements in artillery, and translated from the French a manual of "Manœuvres of Artillery" (1828); and from 1831 to 1834 was superintendent of "contract arms service." He then resigned, became a civil engineer, and was president of the Norwich and Worcester railroad company (1840–'44), of the Morris (N. J.) canal and banking company (1844–'6), of the Macon (Ga.) and western railroad company (1846–'8), of the Dauphin (Penn.) coal company (1858), and of the Allentown (Penn.) railroad company (1860). He was also in 1849 engineer of the Cumberland valley railroad. When the civil war broke out he became colonel of the 1st Connecticut volunteers, and shortly afterward was appointed brigadier-general of the 3 months' troops. At the battles of Blackburn's ford and Bull run he commanded a division, being next in rank under Gen. McDowell. At the end of his term of service he retired to Connecticut, where he became president of a board of military examination, but on March 13, 1862, was reappointed a brigadier-general of volunteers, and ordered to the West. He commanded a division of the army of the Mississippi during the campaign which terminated with the evacuation of Corinth. After the surrender of Harper's Ferry in Sept. 1862, he was ordered to assume command of the paroled troops, who were formed into a camp of instruction at Camp Douglas, near Chicago. From this duty he was detailed in November, to serve on the court of inquiry into the conduct of Gen. Buell.

TYLER, Erastus B., brigadier-general of volunteers in the U. S. army, born in West Bloomfield, Ontario co., N. Y., April 24, 1822. He removed to the state of Ohio, and was educated at Granville college. In 1845 he entered into mercantile business, in which he continued until the civil war. He was commissioned as colonel of the 7th regiment Ohio volunteers in April, 1861, and led his command into western Virginia, where he was assigned to a brigade by Gen. Lander in Jan. 1862, which he commanded with credit at Cross Lanes, Aug. 26, 1861; at Winchester, March 23, 1862; and at Port Republic, June 9, 1862. He commanded a brigade at Fredericsburg, Dec. 13, 1862, where he was wounded.

V

VAN CLEVE, Horatio Phillips, brigadier-general of volunters in the U. S. army, born in Princeton, N. J., Nov. 23, 1809. He studied first at Princeton college, and was graduated at West Point in 1831, obtaining a commission as brevet 2d lieutenant in the 5th infantry. In 1836 he resigned his commission, and, after living for a short time in Missouri and Ohio, removed to Michigan, where he was principally engaged in agriculture, though occasionally employed as a civil engineer. He removed to Minnesota in 1856, and in July, 1861, received a commission as colonel of the 2d Minnesota volunteers. He was ordered with his regiment to Kentucky, and commanded it at the battle of Mill Spring, Jan. 19, 1862. For his conduct on this occasion he was appointed brigadier-general of volunteers, March 21, 1862.

VAN DORN, Earl, a general in the service of the confederate states, born in Mississippi about 1823, was graduated at West Point in 1842 and appointed brevet 2d lieutenant in the 9th infantry; became 2d lieutenant Nov. 30, 1844, and 1st lieutenant March 3, 1847; was brevetted captain for gallantry at Cerro Gordo, April 18, and major for gallantry at Contreras and Churubusco, Aug. 20, distinguished himself at Chapultepec, Sept. 8, and was wounded in entering the city of Mexico, Sept. 13, 1847; was aide-de-camp to Gen. P. F. Smith in 1848–'9, and treasurer of the military asylum at Pascagoula, Miss., from Jan. 1852, to June, 1855; became captain in the 2d cavalry in March, 1855; distinguished himself in command of an expedition against the Comanches in northern Texas, July 1, 1856, and in command of another expedition against the Comanches near Wichita village, Texas, Oct. 1, 1858, on which occasion 56 Indians were killed, and Van Dorn was wounded in four places, in two of them dangerously; and again he defeated another body of Comanches in the valley of Nescatunga, May 13, 1859. Long known in the army as zealously devoted to the interests of the slaveholding states, he was among the very first to resign his commission, which he did Jan. 31, 1861, became a colonel in the confederate service, and at once took command of a body of Texas volunteers and prepared to do his part in getting possession of the vast amount of military stores and equipments which the U. S. government had collected in Texas. On April 20 he captured the valuable steamer Star of the West at Indianola; on April 24, at the head of 800 men at Saluria, he received the surrender of Major C. C. Sibley and 7 companies of infantry, and on May 9, of Lieut. Col. Reeve and 6 companies of the 8th infantry. Promoted to be a brigadier-general, and soon afterward to be a major-general, he took command of the trans-Mississippi district Jan. 29, 1862; commanded at the battle of Pea ridge, March 6, 7, and 8; was superseded by Gen. Holmes, joined the army in Mississippi, commanded at the battle of Corinth, Oct. 3 and 4, and has since been in comparative disgrace for his failure there, his command having been taken by Gen. Pemberton.

VIELÉ, Egbert L., brigadier-general of volunteers in the U. S. army, born in Saratoga co., N. Y., June 17, 1825. He was graduated at West Point in 1847, was brevetted a 2d lieutenant of infantry, and joined the army in Mexico, where he served until the end of the war. He was subsequently stationed for several years in Texas, and in 1853 resigned his commission and was appointed state engineer of New Jersey, of which he was directed to make a geodetic survey. In 1856 he was appointed engineer-in-chief of the Central park of New York, and in 1860 of Prospect park, Brooklyn. After the breaking out of the civil war he proceeded to Washington in command of a body of recruits for the 7th New York militia regiment; and in Aug. 1861, he was commissioned a brigadier-general of volunteers, and directed to form a camp of instruction near New York. He subsequently accompanied the expedition to Port Royal, and in the spring of 1862 commanded the investing forces at the siege of Fort Pulaski. He was soon after transferred to Fortress Monroe, and commanded the advance at the occupation of Norfolk, of which place he was appointed military governor. He is the author of a "Hand Book for Active Service" (New York, 1861), of reports on Central and Prospect parks and the topographical survey of New Jersey, and of a number of papers on geographical and scientific subjects.

VILLEPIGUE, John B., a general in the service of the confederate states, born in South Carolina, died at Port Hudson, La., in Nov. 1862. He was graduated at West Point in 1854, appointed brevet 2d lieutenant in the 2d dragoons, promoted to be 1st lieutenant in 1857, and ordered to service in the South-West. Resigning in March, 1861, he entered the confederate army, and was commissioned colonel of a Georgia and Mississippi regiment. He held this command at the bombardment of Fort Pickens in November, when he was wounded. Afterward he was appointed brigadier-general and ordered to the Mississippi. He held command of Fort Wright in the spring of 1862, and after the evacuation of that post was ordered to Grenada, Miss., where he remained about two months. He took part in the battle of Corinth, and was subsequently in command at Mobile. He died of pneumonia.

VINTON, Francis Laurens, brigadier-general of volunteers in the U. S. army, born in Fort Preble, Portland harbor, Me., June 1, 1835. He is the son of Major John Rogers Vinton, killed at the siege of Vera Cruz, was educated under the guardianship of his uncle, the Rev. Francis Vinton, and was graduated at West Point in 1856. He was brevetted 2d lieutenant in the 1st cavalry, but resigned in September of the same year in order to devote himself to the science of metallurgy, and in 1857 became a pupil of the *école des mines impériale* at Paris, where he was graduated with distinction. He then visited Central America to examine its mineral resources, but on the outbreak of the civil war hastened home and was appointed captain in the 16th U. S. infantry. He was immediately offered the command of a volunteer regiment by the governors of 3 states, and accepted that of the 43d New York, with which he fought in Hancock's brigade throughout the Chickahominy campaign. He was highly commended by his generals, and appointed brigadier-general of volunteers, Sept. 19, 1862. He commands the brigade formerly under Davidson in Howe's division (formerly Smith's) of the 6th (W. F. Smith's) army corps in Gen. Franklin's left grand division of the army of the Potomac. He was wounded in the battle of Fredericsburg, Dec. 13, 1862.

W

WADSWORTH, James Samuel, brigadier-general of volunteers in the U. S. army, born at Geneseo, N. Y., Oct. 30, 1807. He was educated at Harvard and Yale colleges, studied law in Albany, and completed his course in the office of Daniel Webster. He was admitted to the bar in 1833, but never practised his profession, devoting himself to the management of his large patrimonial estates, chiefly situated in western New York. He was appointed by the legislature of New York a commissioner to the peace convention held in Washington in 1861, and at the opening of the civil war he was one of the first to offer his services to the government. In April he was commissioned major-general by Gov. Morgan of New York, but the authority under which the appointment was made was subsequently revoked, and the commission withdrawn. The destruction of railroad bridges between Philadelphia and Baltimore having obstructed the communication with Washington, he chartered a vessel, freighted it with supplies at his own expense, and sailed with it to Annapolis. In June he was appointed volunteer aid on the personal staff of Gen. McDowell, was present at the first battle of Bull run, and was particularly commended in the report of that general for the bravery and humanity he then displayed. He was made brigadier-general of volunteers Aug. 9, 1861, and was assigned to a command in the advance under Gen. McClellan. In March, 1862, he was appointed military governor of the District of Columbia. He was the candidate of the republican party for governor of New York in Nov. 1862, but was defeated by Mr. Horatio Seymour. In December following he was assigned to the command of a division in the army of the Potomac under Gen. Burnside.

WALLACE, Lewis, major-general of volunteers in the U. S. army, born in Fountain co., Ind., about 1828. He is a son of ex-Governor Wallace of Indiana, studied law in his father's office, and commenced practice at Crawfordsville in that state, but during the Mexican war served as 2d lieutenant in the 1st Indiana volunteers. He afterward resumed his profession, and for one term was a member of the state senate from Montgomery county. When the civil war broke out he was appointed adjutant-general of Indiana, and soon afterward colonel of a regiment of zouaves enlisted for 3 months, with whom he took part in the battle of Romney and other operations in western Virginia. At the close of their term of service they were reorganized under his command as the 11th Indiana volunteers and sent to Missouri. On Sept. 3 he was commissioned brigadier-general of volunteers, was assigned a brigade under Gen. C. F. Smith, and for some time was in command at Smithland, Ky. He led a division at the capture of Fort Donelson, where he won his promotion to the rank of major-general, dating from March 21, and was distinguished for his gallantry at the battle of Shiloh. After the evacuation of Corinth he was ordered with his division to Memphis. In Nov. 1862, he was appointed president of the court of inquiry assembled to investigate Gen. Buell's conduct in Kentucky.

WALLACE, William Harvey Lamb, brigadier-general of volunteers in the U. S. army, born in Urbana, O., July 8, 1821, died at Savannah, Tenn., April 10, 1862. In 1833 his father removed with his family to Illinois. During the winter of 1844–'5 young Wallace, the eldest of 5 brothers who have all taken part in the civil war, went to Springfield to study law. He afterward studied at Ottawa, and was admitted to the bar in 1846, but did not practise until his return from the Mexican campaign, at the commencement of which he enlisted as a private in Col. Hardin's 1st regiment Illinois volunteers. He became lieutenant and adjutant, and took part in the battle of Buena Vista. In 1853 he was elected state's attorney for the 9th judicial circuit. In May, 1861, he was elected colonel of the 11th Illinois volunteers, and early in Feb. 1862, was placed in command of the first brigade of McClernand's division of Gen. Grant's army. He bore a conspicuous part in the capture of Fort Donelson, was appointed brigadier-general in March, and was mortally wounded at the battle of Shiloh.

WASHBURN, Cadwallader Colden, brigadier-general of volunteers in the U. S. army, born in Livermore, Me., April 22, 1818. He was educated as a land surveyor, and in 1839 went to Illinois, where he soon afterward began to study law. After his admission to the bar he settled at Mineral Point, Wis., and in 1859 removed to La Crosse. He was a representative from Wisconsin in the 34th, 35th, and 36th congresses. In 1861 he raised a regiment of cavalry, of which he became colonel, and on July 16, 1862, was commissioned brigadier-general of volunteers. In December he conducted a successful expedition from Helena, Ark., into the interior of Mississippi.

WEBER, Max, brigadier-general of volunteers in the U. S. army, born in Baden, Germany, Aug. 24, 1824. He entered the military school of Karlsruhe in 1841, was graduated in 1844, and until 1849 held a commission in the Badenese service. During the Baden revolution of 1849 he served in the revolutionary army under the command of Gen. Sigel, and in 1850 emigrated to America and took up his residence in New York. In April, 1861, he was elected colonel of the 20th New York ("Turner") regiment of volunteers, and proceeded with his command to Fortress Monroe. In the succeeding August he accompanied a portion of his regiment to Fort Hatteras under orders from Gen. Butler, and from September until May, 1862, was in command at Camp Hamilton near Fortress Monroe, having in the interval been appointed a brigadier-general of volunteers. During the fight between the Monitor and Merrimac he was stationed at Newport News in anticipation of an attack by the rebel forces from Yorktown. On May 11 he occupied Norfolk with his brigade, and was afterward stationed at Suffolk, Va. In the battle of Antietam he commanded a brigade in French's division of Gen. Sumner's army corps, and was slightly wounded.

WEBSTER, Joseph D., brigadier-general of volunteers in the U. S. army, born at Old Hampton, N. H., May 25, 1811. He was educated at Dartmouth college, became a civil engineer, was appointed 2d lieutenant in the corps of topographical engineers in 1838, and served with distinction through the Mexican war. He was promoted to be 1st lieutenant in 1849, and captain in 1853. In 1854 he resigned his commission and settled in Chicago, Ill. He accompanied the first body of troops that went from Chicago to Cairo in April, 1861, and took charge of the fortifications at that place, Bird's Point, and Fort Holt, and at the same time acted as paymaster at Cairo. He also, at the request of the late Gen. Charles F. Smith, erected the fortifications at Paducah. In Feb. 1862, he was appointed colonel of the 1st regiment of Illinois artillery, and was present at the capture of Fort Henry and Fort Donelson. At the battle of Shiloh he was placed in charge of all the artillery, and received the highest commendation in Gen. Grant's official report. He remained with Gen. Grant as chief of his staff until Oct. 1862, when he was detailed by the war department to make a survey of the Illinois and Michigan canal, for the purpose of obtaining a correct estimate of the cost of the proposed enlargement of that work. He was nominated brigadier-general of volunteers Oct. 14, 1862.

WEITZEL, Godfrey, brigadier-general of volunteers in the U. S. army, born in Ohio about 1833, was graduated at West Point, second in his class, in 1855, appointed brevet 2d lieutenant of engineers, and promoted to be 1st lieutenant in 1860. When Gen. Butler was appointed to the department of the gulf, Lieut. Weitzel was attached to his staff. He became assistant military commander and acting mayor of New Orleans after its capture, and while acting in these capacities was nominated brigadier-general of volunteers. In Oct. 1862, he was placed in command of the reserve brigade, with which he took possession of Donaldsonville, and on Oct. 27 routed a large force of the enemy at Labadieville, capturing 200 prisoners and a quantity of arms and ammunition.

WESSELLS, Henry Walton, brigadier-general of volunteers in the U. S. army, born in Litchfield, Conn., Feb. 20, 1809. At the age of 19 he entered the military school of Capt. Partridge at Middletown, Conn., and the next year went to West Point, where he was graduated in 1833. He was brevetted 2d lieutenant in the 2d infantry; was engaged in the Creek war in Georgia in 1835, and the Seminole war in Florida in 1837–'43; was promoted to be 1st lieutenant in 1838, and captain in 1847; was brevetted major for gallantry at Contreras and Churubusco, in the former of which engagements he was wounded; and after the close of the war with Mexico went with his regiment to California, and thence in 1854 to Kansas and Nebraska. In June, 1861, he was appointed major in the 6th infantry. During the winter of 1861–'2 he was granted leave of absence, and organized the 8th regiment of Kansas volunteers. In the spring he joined his own regiment before Yorktown, in Gen. Sykes's command. He was commissioned brigadier-general of volunteers April 25, 1862.

WHIPPLE, Amiel W., brigadier-general of volunteers in the U. S. army, born in Greenwich, Mass., was graduated at West Point in 1841, commissioned brevet 2d lieutenant in the 1st artillery, and then transferred to the topographical engineers. In 1841 he was engaged in the hydrographical survey of the Patapsco river, and in 1842 in surveying the approaches to New Orleans and the harbor of Portsmouth, N. H. In 1844 he was detailed as assistant astronomer upon the north-eastern boundary survey, and in 1845 was employed in determining the northern boundaries of New York, Vermont, and New Hampshire. In 1849 he was appointed assistant astronomer on the Mexican boundary commission, and became 1st lieutenant in 1851. His journal while in Mexico was published by order of congress. He returned to Washington in the spring of 1853, was then ordered to direct the southern Pacific railroad survey, and was employed one year in this service. In July, 1855, he was promoted to be captain of topographical engineers, and in Jan. 1856, appointed lighthouse engineer, inspector of the 10th lighthouse district, and afterward superintendent of the improvement of St. Clair flats and St. Mary's river. In the spring of 1861 he was made chief engineer on the staff of Gen. McDowell, was present at the first battle of Bull run, and was afterward employed on surveys for fortifications. He was promoted to be major of engineers, Sept. 9, 1861. Upon the second advance of the army he was attached to the staff of Gen. McClellan, made brigadier-general of volunteers in May, 1862, and placed in charge of all the fortifications and garrisons on the S. side of the Potomac. Shortly afterward he was promoted to the command of a division in the 9th army corps.

WHITE, Julius, brigadier-general of volunteers in the U. S. army, born at Cazenovia, Madison co., N. Y., Sept. 29, 1816. He removed to Illinois in 1836, and has resided in that state, Missouri, and Wisconsin since that time, engaged in commercial pursuits. In 1849 he was a member of the Wisconsin legislature. In the spring of 1861 he was appointed collector of customs at Chicago, which office he resigned upon being appointed to the command of the 37th regiment Illinois volunteers, then known as the Fremont rifle regiment. He commanded the 37th during Fremont's expedition to S. W. Missouri in the autumn of 1861, and was afterward placed in command of a brigade and accompanied Gen. Curtis into Arkansas during the winter of 1861–'2. He was present at the battle of Pea ridge, and was promoted to the rank of brigadier-general for gallant conduct in that battle, to date from June 9, 1862. He was assigned to a command in the department of the Shenandoah, and afterward ordered to report to Gen. Wool. In September he was at Martinsburg, and when that place became untenable retired to Harper's Ferry. Here he volunteered to serve as second in command under his inferior officer Col. Miles, commanding that post, and acted in that capacity until the surrender of the place to the confederate Gen. Hill on the 15th, when he became a prisoner of war, but was released on parole. He was placed under arrest by the authorities at Washington, and at his own request a court of inquiry was ordered to investigate the circumstances of the surrender. The investigation resulted, early in November, in his entire acquittal, the commission finding that he acted with decided capability and courage.

WHITE OAK SWAMP. See Chickahominy.

WHITING, William Henry Case, a general in the service of the confederate states, born in Massachusetts, was graduated at West Point in 1845 and appointed 2d lieutenant in the corps of engineers; became 1st lieutenant in March, 1853, and captain in Dec. 1858; and resigned his commission Feb. 20, 1861. He was chief engineer, with the rank of major, to the army of the Shenandoah under Gen. J. E. Johnston, in June and July, 1861; was appointed brigadier-general, and commanded a brigade whose timely arrival saved for the confederates the battle of Bull run, July 21. He took part in the battle at West Point, Va., May 7, 1862.

WILLCOX, Orlando Bolivar, brigadier-general of volunteers in the U. S. army, born in Detroit, Mich., in 1823, was graduated at West Point in 1847, appointed 2d lieutenant in the 4th artillery, and ordered to Mexico. He was afterward stationed at Forts Washington, Ontario, Mifflin, and Independence, and served in Texas and during the final settlement of the Indian troubles in Florida. He became 1st lieutenant in 1850, and resigned his commission in 1857. In 1858 he was admitted to the bar of his native city, and practised his profession until 1861, when he obtained a commission as colonel of the 1st regiment Michigan volunteers. At the first movement of the army from Washington he was made military governor of Alexandria, and commanded a brigade at the first battle of Bull run, where he was severely wounded and taken prisoner. He was carried to Richmond, and subsequently removed to Castle Pinckney at Charleston, and thence to the common gaols in Charleston and Columbia, as one of the hostages for the privateers captured by the federal government. He remained in confinement until Aug. 1862, when his release was effected by a general exchange of prisoners; and as an acknowledgment of his services he was made brigadier-general of volunteers, his commission dating from July 21, 1861. After the battle of Antietam he was placed in command of the 9th army corps.

WILLIAMS, Alpheus Starkey, brigadier-general of volunteers in the U. S. army, born in Saybrook, Conn., Sept. 20, 1810. He was graduated at Yale college in 1831, and removed in 1836 to Detroit, where he practised law until 1841. He was judge of probate for his county from that time until 1845, and editor and proprietor of the Detroit "Daily Advertiser" from 1843 to 1847. He served in the Mexican war as lieutenant-colonel of Stockton's Michigan volunteers, and was postmaster of Detroit from 1848 to 1852. He was appointed brigadier-general of volunteers in May, 1861, and was on duty in Michigan organizing the volunteer regiments until September; was then ordered to report to Gen. Banks, and was assigned to the command of the 1st division in his corps in March, 1862. At the battle of Cedar mountain, Aug. 9, he commanded a division, of which one third were killed or wounded.

WILLIAMS, Seth, brigadier-general of volunteers in the U. S. army, born in Augusta, Me., March 22, 1822. He was graduated at West Point in 1842 and appointed brevet 2d lieutenant in the 2d artillery; was promoted to be 2d lieutenant in 1844, and 1st lieutenant in 1847; served with Gen. Scott's army in Mexico, participating in the principal battles, as aide-de-camp to Maj. Gen. Patterson, and was brevetted captain for gallantry at the battle of Cerro Gordo. After the war he was assigned to the adjutant-general's department, and promoted to be major Aug. 3, 1861. He was adjutant-general to Gen. McClellan in western Virginia, and continued in the same position on his staff until McClellan was relieved of the command of the army of the Potomac. He was appointed brigadier-general of volunteers Sept. 23, 1861, and lieutenant-colonel in the adjutant-general's office July 17, 1862.

WILLIAMS, Thomas, brigadier-general of volunteers in the U. S. army, born in the state of New York in 1818, killed at Baton Rouge, La., Aug. 5, 1862. He was graduated at West Point in 1837 and appointed 2d lieutenant in the 4th artillery; was promoted to be 1st lieutenant in 1840; was acting assistant professor of mathematics at West Point in 1840-'41; became aide-de-camp to Gen. Scott in 1844; and was brevetted captain in 1848 for gallantry at Contreras and Churubusco, and major in 1849 for gallantry at the battle of Chapultepec. He received his captain's commission in 1850. In May, 1861, he was appointed major in the 5th artillery, and in September received a commission as brigadier-general of volunteers. He first commanded a brigade on the Potomac, and afterward was placed in charge of the captured forts at Hatteras inlet, where he remained until ordered to join Gen. Butler's expedition to Ship island. After the capture of New Orleans he was placed in command of the land forces coöperating with the gunboat fleet in the attack upon Vicksburg. When the siege of that place was abandoned he went to Baton Rouge, and commanded the national forces there when the city was attacked by the confederates under Gen. Breckinridge. He fell while leading a Michigan regiment, toward the close of the action.

WILSON'S CREEK. See Springfield, Mo., vol. xv.

WINCHESTER (Va.), Battle of. (See Winchester, vol. xvi. p. 462.) On March 18 and 19, 1862, Gen. Shields found by reconnoissance that the confederates under Gen. T. J. Jackson were strongly posted near Newmarket, and within supporting distance of their main body under Johnston, at Luray and the village of Washington. In order to decoy Jackson from his position, Shields fell back as if retreating to Winchester, and posted his force in a secluded situation 2 m. from that place. On the morning of the 22d a part of Gen. Banks's corps departed for Centreville, leaving only Shields's division and the Michigan cavalry. At 5 P. M. of that day, the enemy's cavalry under Col. Ashby drove in the Union pickets and made an attack; but Shields led out a part of his troops and repulsed them, being himself wounded in the arm by a fragment of a shell on the first fire. During the night he ordered Kimball's brigade with Daum's artillery forward 3 m. on the road S. or toward Strasburg, where they took a position along a ridge commanding the road and surrounding country, planting 3 batteries of artillery, and rested on their arms until morning. Sullivan's brigade with Brodhead's artillery were placed in the rear as a reserve. A reconnoissance in front on the morning of the 23d showed no other hostile force than Ashby's cavalry stationed at some distance; and Gen. Banks thereupon proceeded toward Washington under previous orders. The confederates had, however, been largely reënforced by troops under Jackson, the main body of which was formed in line on the ridge at about a mile's distance, being supported by a battery on each flank, but surrounded and masked by woods. The national force on the ground did not exceed 7,000, inclusive of 750 cavalry, and with 24 cannon; that of the confederates was not less than 11,000, including 1,500 cavalry, and having 24 cannon. Firing commenced and continued from the early part of the day, but much of it at too great a distance to be effective. About 12 o'clock evidences of the large infantry force in the woods were presented, and not long after the enemy pushed forward, endeavoring to turn the Union left, but were repulsed. Strengthening their left and centre, these were then advanced, compelling the Union right with Daum's batteries to retire. Gen. Shields at this juncture ordered Tyler's brigade, and soon after several other regiments, to the support of his right; the struggle at this point became desperate, and was for a time doubtful; but when the Union forces had all arrived, they dashed on the enemy with loud cheering, and the latter were soon forced back through the woods with considerable slaughter. Upon reaching their reserves they again made a stand, getting their guns in position; but after a few minutes of the same destructive fire they turned and finally retreated, leaving to the Union forces possession of the field, their killed and wounded, 2 cannon, and about 1,000 stand of arms. The retreat continued 5 miles, when darkness put an end to the pursuit. Meantime, large reënforcements had started to join Jackson, but the swelling of the Shenandoah by rains compelled them to abandon the attempt. Gen. Shields also had recalled the troops which had left on the previous morning, and called in his outposts; while Gen. Banks, returning from his way to Washington, had resumed command. At daylight of the 24th the national troops again opened fire with 24 pieces of artillery, following the enemy, who retreated in good order, as far as Woodstock; the pursuit was then abandoned owing to the exhaustion of the troops. The national loss amounted to about 132 killed and 540 wounded, among the former being Col. Murray of the 84th Pennsylvania regiment. The confederate loss was not less than 869 killed, wounded, and missing.

WOOD, Thomas Jefferson, brigadier-general of volunteers in the U. S. army, born in Kentucky, Sept. 25, 1825. He was graduated at West Point in 1845, and appointed brevet 2d lieutenant in the corps of topographical engineers. He was distinguished at the battle of Palo Alto, was assigned to the 2d dragoons in 1846, and was brevetted 1st lieutenant for gallantry at Buena Vista. In 1848 he was sent to the Texan frontier, and was in active service against the Indians with but a short interval until 1854. In 1855 he was promoted to be captain in the 1st cavalry, and remained on the western plains and in Utah until 1859, when he obtained leave of absence for two years, during which time he was appointed major. He returned from Europe just before the attack on Fort Sumter, and was ordered to Indiana to muster volunteers into the service, and promoted to be lieutenant-colonel of his regiment. In Oct. 1861, he was appointed brigadier-general of volunteers and assigned to a brigade in the army of the Ohio. On Nov. 12 he was promoted to be colonel of the 2d cavalry, and soon after appointed to the command of a camp of instruction at Bardstown, Ky. He was then placed in command of the 6th division of the army of the Ohio, which accomplished a difficult march of 140 miles in 8 days; but being detained opposite Pittsburg Landing for want of transportation, only two brigades under Gen. Wood arrived in time to take part in the battle of Shiloh. After the evacuation of Corinth he was stationed in Tennessee, and accompanied Gen. Buell's army in its march to Kentucky.

WOODBURY, Daniel Phineas, brigadier-general of volunteers in the U. S. army, born in New Hampshire, was graduated at West Point in 1836, commissioned 2d lieutenant in the 3d artillery, and 1st lieutenant in the corps of engineers in 1838. In 1847 he established Forts Kearny and Laramie, two military posts on the Platte river. He was made captain of engineers in 1853, and from 1856 to 1860 was engaged in the construction of Fort Jefferson, Tortugas. When the civil war broke out he was in Wilmington, N. C., with difficulty passed through Virginia to Washington, was employed on the fortifications of that city from May, 1861, to March, 1862, and was then made brigadier-general of volunteers and placed in charge of the engineer brigade, which was actively employed during the campaign before Richmond and in December before Fredericsburg. He is the author of two papers on practical engineering published by the engineer department.

WORDEN, John Lorimer, an officer in the U. S. navy, born at Mount Pleasant, Westchester co., N. Y., March 12, 1818. He was appointed midshipman in 1834 and lieutenant in 1840, and after nearly 9 years' sea service was ordered to the national observatory at Washington, where he remained until the breaking out of the Mexican war, when he was ordered to the store ship Southampton of the Pacific squadron. In 1850 he returned to the national observatory, where he remained about 2 years. From 1855 to 1858 he was 1st lieutenant at the Brooklyn navy yard. In April, 1861, he was sent overland with despatches from the secretary of the navy to Capt. Adams of the frigate Sabine, then at Pensacola. Anticipating a speedy outbreak of hostilities, he committed his despatches to memory on the road, and destroyed them. On his arrival at Pensacola he was arrested by the confederate authorities, but released by order of Gen. Bragg and permitted to go on board the frigate. On his return northward he was again arrested near Montgomery by order of Gen. Bragg, and kept in the county gaol until November, when he was released on parole, and ordered to report to the adjutant-general at Richmond. Thence he was sent to Norfolk and exchanged. His health being impaired, he remained in New York until Feb. 1862, and then took command of the Ericsson battery Monitor, with which he engaged the Merrimac in Hampton roads, March 9. (See Hampton Roads, in this supplement.) During the fight a shell from the Merrimac struck the pilot house of his vessel, and severely injured him by driving into his eyes powder from the shell and small particles of iron. After his recovery he was ordered on special duty in connection with the new iron-clad gunboats, of one of which, the Montauk, he now (Dec. 1862) has command. He was promoted to the rank of commander in the summer of 1862.

WRIGHT, George, brigadier-general of volunteers in the U. S. army, born in Vermont about 1803, was graduated at West Point in 1822 and appointed 2d lieutenant in the 3d infantry; became 1st lieutenant Sept. 23, 1827; was adjutant from 1831 to 1836; became captain Oct. 30, 1836; was transferred to the 8th infantry July 7, 1838; was brevetted major for good conduct in the war against the Florida Indians, March 15, 1842, lieutenant-colonel for gallantry at Contreras and Churubusco, Aug. 20, and colonel for gallantry at Molino del Rey, Sept. 8, 1847, where he was wounded; became major of the 4th infantry Jan. 1, 1848, lieutenant-colonel Feb. 3, 1855, and colonel of the 9th infantry March 3, 1855; served in Washington territory from 1856 to 1860, and greatly distinguished himself in wars with the Indians of that region; and was promoted to be brigadier-general of volunteers Sept. 28, 1861, and appointed to command the department of the Pacific, which office he still holds (Dec. 1862), having his head-quarters at San Francisco.

WRIGHT, Horatio Gates, major-general of volunteers in the U. S. army, born in Connecticut about 1822, was graduated at West Point in 1841 and appointed 2d lieutenant of engineers; was acting assistant professor of engineering at West Point from Jan. 20, 1842, to Aug. 20, 1843, and assistant professor to July 2, 1844; became 1st lieutenant Feb. 28, 1848, captain in July, 1855, and major Aug. 6, 1861; was promoted to be brigadier-general of volunteers Sept. 14, 1861, and attached to the Port Royal expedition, in which he commanded the 2d brigade. He commanded the land forces in an expedition which sailed from Port Royal Feb. 27, 1862, and successfully took possession of Fernandina, Fla., where he remained for a time as commander of the district. In July, 1862, he was ordered with his brigade to reënforce the army of the Potomac; and on Aug. 19 he was promoted to be a major-general and assigned to command the department of the Ohio, with his head-quarters at Cincinnati, where he still remains (Dec. 1862).

Z

ZOLLICOFFER, Felix K., a general in the service of the confederate states, born in Maury co., Tenn., May 19, 1812, killed at the battle of Mill Spring, Jan. 19, 1862. He was educated at an academy in his native county, learned the trade of a printer, and in 1829 undertook to edit a newspaper at Paris, Tenn. In 1835 he was elected state printer, and in 1842 he removed to Nashville and became the editor of the "Banner," an influential whig journal; in 1845 he was chosen comptroller of the state treasury, and was twice reëlected to that office, going out of it in 1849, when he was chosen to the state senate. While a member of that body he became a contractor for building the suspension bridge across the Cumberland river at Nashville, after which he resumed and for two years occupied his former post as editor of the Nashville "Banner." In 1852 he was chosen to represent the Nashville district in congress, and was reëlected in 1857, his second official term expiring March 4, 1859. Originally a whig, the progress of the controversy respecting slavery led him to become a democrat, and he early assumed a position in congress among the advocates of extreme southern views. After the battle of Bull run he entered the confederate army, was appointed a brigadier-general, and assumed command of East Tennessee Aug. 8, 1861. He entered S. E. Kentucky about Oct. 1, was defeated at Camp Wild Cat Oct. 21, and fell in an unsuccessful attack upon the national forces under Gen. G. H. Thomas near Mill Spring.

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